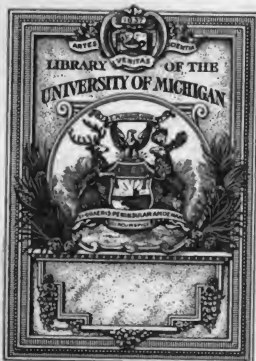




The World's work



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THE WORLD'S WORK

VOLUME V

NOVEMBER, 1902, to APRIL, 1903

A HISTORY OF OUR TIME

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THE WORLD'S WORK

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VOLUME V



NUMBER I

A Word on a Birthday

WHILE we are young it were wrong not to celebrate a birthday, especially if it fall in the Thanksgiving month. Since THE WORLD'S WORK is now two years old and its dominant mood is thankfulness, why should it not frankly speak its birthday gratitude? For it was luckily born—born of a strong impulse tempered with not too much deliberation.

"We must make a magazine," it was said two years ago—"must for the sheer love of it"; for the owners and the conductors of THE WORLD'S WORK (and its owners are its conductors) had had a considerable experience, and had for many years got growth and pleasure in the practice of the magazine craft, or art, or profession (whatever you choose to call it, for it is all three); and men who have pleasantly spent the first half of their lives going in one direction are likely for the second half to travel the same road.

"But is the time opportune?" we asked one another. Since almost any time is opportune for doing anything if it be done well enough, there was nothing to discuss in that question. Yet not only must a magazine serve the public, but the public must consent to be served by it; and so much of the public as could be found by personal interviews showed no great eagerness for further service or for further suffering.

"Another magazine!" exclaimed one friend.

"Another magazine!" exclaimed another.

So a third—so all. The late Mr. Charles Dudley Warner, when he heard a rumor of it, wrote in his friendly jocose way: "I hear that you are going to put out a new magazine. I had just been thinking how much we need another—there are so few." In fact, the paper makers are the only members of the community who showed a becoming eagerness about it.

But the lack of definite encouragement in no way touched the root of the matter; for the purpose was not simply to make a magazine, but a magazine that should carry out a particular idea; and everything depended on how well it should be made. There could, then, be no intelligent discussion of the enterprise till the magazine should appear, nor any definite idea formed of its chance to do a useful service. The work of getting it ready, therefore, took the place of discussion.

One thing was clearly settled in the beginning. If the idea were a good one it would prove itself quickly. If it did not prove itself quickly, it should be abandoned. A modest sum of money was set aside (enough to pay for only a few numbers of the magazine). If, when that were spent, it did not show vitality, it should be stopped. If it had to be kept alive by the sheer force of money, it were not worth keeping alive. There should be no halting life. Of struggling magazines there surely were already too many.

It turned out that there was just at that time no well-equipped printing house in New York City that had room to take it in and to do the work with the degree of mechanical excellence that was demanded. A part of the magazine was, therefore, printed in Massachusetts, a part of it at one place in New York, and it was sewed (sewed, mind you; not wired) at still another place in New York—with some physical difficulty and with a great deal of trouble, all which has long ago been forgotten; for presently a printing establishment appeared, as if made for this very purpose. And other good and necessary things began to appear—and they have been appearing ever since.

But when the first number was published, it made very different impressions on different men. "I cannot see any reason for its existence," said one of our foremost men of letters, with friendly frankness. "It has no definite idea, and it isn't literature." A year later the same man said: "I now see what you mean. You really take our pushing American life seriously, as a thing that has a deep moral meaning, and not as a mere method of gain. I now see the tremendous earnestness of the magazine and its real faith in our democracy. Other people say that they believe in all our activity and in what it leads to. You really do believe in it, and you have converted me." A change of opinion like that was worth waiting a year for surely!

On the other hand, Mr. Andrew Carnegie, who also is a member of the Authors' Club in New York, took the trouble to write that the first number was so good that "you can't keep it up." Mark Twain, who is a philosopher as well as a man of letters and a man of experience in life, wished it mighty well by an apt story, but he did not entangle himself in prophecy. There is a copy of the first number on which Mr. Kipling wrote illuminating and helpful comments from beginning to end—advertising pages and all. The conflicting opinions that sensible men form about the same magazine is one of the most astonishing phenomena of human society.

But with all respect to the opinions of eminent men, and grateful for their appreciation is, they are of less value regarding a magazine whose aim is to interpret the activity of the people, than the judgment of great numbers of the active people themselves. The soundness of the idea that under-

lies *THE WORLD'S WORK* began to find proof at once in expressions like these from thousands of such men: "It's a working magazine." "It believes in the American man who does things." "It gives new energy to its readers." In other words, the people took to reading it; and their approval of its serious purpose was the final proof of its service. The great commercial public, too, quickly showed its appreciation. "It's practical," they said; whereby, of course, they usually meant that it made an appeal to their imagination.

By reason of its earnest sympathy with all men who work to some purpose, even the little sum of money that the magazine was born with was not needed for its rearing; for it quickly made its own way. It is amusing now to look over the carefully drawn estimates of its cost, for the cost turned out to be very much greater than the estimates. Luckily the income, too, was greater than the estimated income, else this page would never have been printed to tell this story.

The broad idea of the magazine is that efficient activity by the whole people is the basis of all sound and beautiful growths in a democracy. It is the basis of social health, of political sanity, of literature—of everything; and the efficient activity of men now living is, therefore, the most interesting subject in the world to make a helpful magazine literature about. Or, to say it in another way, the magazine that adds to the well-balanced energetic impulse of our times is a useful force in American life.

But a birthday party is not a fit time for a sermon, especially the birthday party of a magazine that believes little in sermons as a means of grace, and much in work. But it is an occasion to thank one's good friends. From every part of the world they have come, in unexpected numbers, and many of them are the foremost men in almost every kind of useful work. To say thanks to them is the purpose of this page stolen from its usual use. The contributors to *THE WORLD'S WORK* have made its conduct a constant pleasure by their courtesy and by their earnestness. The managers of the business of the magazine, too, have met the most courteous appreciation in the commercial world, and its advertising patronage has outrun the largest expectations.

During these two years the great events, it has so happened, have been industrial



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GOVERNOR A. B. CUMMINS

[“The Republicans of my State believe the time has come for certain changes in the tariff. . . . We know that there are monopolies which could not stand for a minute if there were nothing but legitimate protection in the Dingley law.”—*From an interview with Governor Cummins in The New York Times, September 25th*]

events; and the emphasis has naturally been laid on them. But the emphasis will be changed as events change, else it would not be emphasis at all, but only the tom-tom of class periodical literature; and class periodical literature, whether it be of the industrial or of the political class, or of the literary class, or of the educational class or what not—well, that is another story.

And suggestions have not been lacking for *THE WORLD'S WORK* to become a class periodical if it had been so minded. Early in its career one of the political machines became suggestively cordial. (The amusing thing is that anybody should think that a political magazine could have any political influence.) More than once plans have been proposed for a great service to literature by the publication of many critical articles. (The amusing thing is that anybody should think that "literary" articles have any effect on literature.) Many propositions have been made for great "industrial features," for "departments" of all sorts, for more attention to women's work—for many plans to further social progress by machine methods—all well meant, all plausible, all sound except for the fatal fact that the moment you become a special pleader you lose your moral influence; and the ossification of magazines begins in their "Departments." A sort of melancholy gaiety has been given to life also by the offer at low prices of many other magazines which need only "a little pushing" to roll over the line that separates sheer toil from achievement. "Push a magazine!" once exclaimed

a very successful editor; "I wouldn't have one that didn't pull. Can you push a horse by the reins?"

In other countries as well as our own *THE WORLD'S WORK* has been most kindly received. "It is accepted here as the best interpreter of the American spirit"—so word has come time and again by personal report or by letter from almost every country in Europe, from Japan, from South America, from South Africa; and there have been proposals to publish editions for several foreign countries. Many such suggestions were received from England; and the owners of the magazine were glad last summer to see the best possible plan take shape in an English *WORLD'S WORK*, which begins a vigorous career this month under the editorship of Mr. Henry Norman, the distinguished writer and journalist, with Mr. William Heinemann as publisher, a magazine independent of this one, but with the same name and the same aim, and on a basis of practical coöperation with *THE WORLD'S WORK*.

And now, these festivities ended, let us again turn to work under the pleasing excitement of the march of events—work that from one year's end to another is a high pleasure, because the events of our time are so interesting that we do not envy the past, and we may even be content that the future must belong to others since we may help to shape it. So interesting is our time and our country that we are most fortunate who happen here and now to be passing through the world.

The March of Events

THERE has grown up in the now long-dominant party at Washington a solid solidity of comfortable old-party managers. They are not what is usually called a political machine. But they are formed into an impregnable phalanx of privilege. Most of them are old, rich, comfortable, famous, each in his own area and in his own way, and they are powerful. They control the party machinery in many States. By temperament they stand for all vested interests. They have so long regarded themselves and have been regarded by others as

"the party" that they feel a proprietary interest in it and in the government. Most of them are past the age of adaptability to new conditions or of the ability to see new conditions. They prefer the comfort of being let alone and of letting everything else alone. Reciprocity trade treaties? Some of their constituents are opposed to them. The economic relief of Cuba? That disturbs a few tariff schedules. The tariff? Are we not prosperous? The trusts? What can anybody do with the trusts? Moreover, the great corporations and the protected interests



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contribute to campaign funds. This stolid solidity of inaction is the natural result of long prosperity and power as they affect the Elders of any party or sect.

On the other hand, the President is an exceedingly active man, an executive who wishes to bring things to pass, independent, courageous, restless. An inactive part of the government is to him a dead part. Our word once given to Cuba, we must literally and instantly make it good. If the trusts are dangerous, they must be regulated. If tariff schedules become in time unequal, as regarded from a protectionist standpoint, there must be some means of changing them. And, above all, no subject is too sacred for open discussion.

Here is a clash of temperaments that can never be reconciled. The Vested Interests made Mr. Roosevelt Vice-President in order to take him out of the Governor's chair at Albany. He was too "indiscreet" and energetic and independent. The Elders and the Vested Interests would like to keep him out of the Presidency, and they will if they can. But they cannot wage an open warfare. He is the head of the party. He is uncommonly popular. One Republican State convention after another has indorsed him for the next nomination. The Elders cannot be quite frank with him or they dare not be. Few persons are quite frank with any President when they think that he is in error. They speak half truths. They soften criticism with flattery. A party of Senators will confer with the President about his speech-making and fall just short of expressing all their fears of disturbance to the party. But they will subsequently meet and storm and rage among themselves. The Speaker of the House will retire from the next Congress because of a divergence of opinion about the tariff without conferring with the President.

In the meantime there is evidence that the President is as popular among the masses as he is unpopular among the managers. Neither he nor the Elders will make an open rupture. The silent struggle will go on—sometimes it is even an unconscious struggle—till one side or the other succumb; and there will never be public evidence that there ever was a struggle. The most important contests are often the least noisy. Upon this silent struggle probably hangs the fate of the Republican party for a considerable period.

* The qualities of the President as a successful party leader on a national scale must be proved. So far he has surely made a most efficient executive and gained to a remarkable degree the favor of the people. The chance that he will win now seems overwhelming. As for the Republican Elders, if they should have their way, as soon as the Democrats find an able and earnest leader who can command the confidence of the business world, the Republican party would be in grave danger of defeat. The turning point is the public feeling against the trusts and the tariff.

THE EFFECT OF MR. HENDERSON'S RETIREMENT

MR. HENDERSON, of Iowa, the Speaker of the House of Representatives, has refused to run for Congress again (although his election was certain and his reelection to the Speakership probable), because he is too stalwart a Protectionist to stand comfortably on the Iowa Republican platform. His declination was the frank action of an honorable small man; and the political flurry caused by it soon passed, for he is not a commanding personality in national politics.

But it emphasized the restlessness of the Republican party under the tossing of tariff-reform opinion, especially of the anti-trust feeling; and this feeling is stronger in the Western States than in the Eastern. In Iowa, in particular, it will not subside. While a general protective policy seems assured for a long time to come, and we are not in sight of anything like free trade, and while even a tariff solely for revenue is remote, yet the rates of the present Dingley law are not going to stand indefinitely. A modification of them is as inevitable as any legislation can be. The impulsive action of Mr. Henderson has done more to emphasize the strong demand for tariff reform than his whole career has done to promote high protection.

Politically, the matter stands thus: the Republican organization, except in a few Western States, is firmly set against disturbing the tariff as it is—even against discussing it. The Democratic party is in favor of revision, but it has in recent years so aroused commercial distrust in its judgment that it has not yet regained the confidence that the business world gave it in the days of Tilden and of Cleveland; and it is not likely to get a chance to revise the tariff till it finds leaders who can regain this confidence.

In the meantime the Republican party has an admirable opportunity, under the leadership of the President and of men like Senator Spooner and Governor Cummins of Iowa, to provide for reasonable revision and thus to keep in power.

THE PRESIDENT AND THE TARIFF

WHEN the President came to express himself on tariff revision (in his speech at Logansport, Indiana, on his interrupted journey to the West), he held to the fixed policy of protection, "in which," he said, "I think the nation as a whole has now generally acquiesced"; but he recognized the necessity of changes in rates of duty from time to time. He would keep a "stability of economic policy," but he would prevent any "tendency to fossilization." As "our needs shift," it may be found "advisable to alter rates and schedules."

This is not as specific a declaration as Governor Cummins, of Iowa, made when he said that "the practically unanimous sentiment" of the Republicans of Iowa is that "the time has come for certain changes in the tariff;" and that "there are monopolies which could not stand for a minute if there was nothing but legitimate protection in the Dingley law—we abhor the idea that the Republican party should stand as a shield for monopolies." But it shows a radically different temper from Mr. Henderson's when he declined a renomination to Congress, saying that he did not believe that a single item in the Dingley tariff could be changed without harm.

The President's personal preference of methods to ascertain what schedules need change at any time is the method of a commission of experts who should get accurate information for Congress. In a word, he regards the policy of protection as fixed; but he would readapt rates to changing conditions; and he suggests that such a plan might be carried out so as to take the subject out of party politics. It ought to be done scientifically and not by partisan action.

Well, it never will be done scientifically; nor will it ever be taken out of party politics. There is a Utopian touch in this part of the President's programme. In fact, he took up the subject apparently only under the pressure of party division and discussion, and perhaps with some reluctance—reluctance for two reasons: it is not primarily an executive but

rather a legislative matter; and economic discussion is not Mr. Roosevelt's strongest inclination. A remarkable executive, he has a mind rather for action and for events than for analysis and philosophic discussion.

But there are common sense, open-mindedness and good party leadership in this attitude. It is the attitude that his party must take to keep its hold on the restless and earnest and intelligent part of it that is represented by Governor Cummins. The President does not diverge from traditional party policy. But in general terms he refuses to be a fossil.

As regards tariff reform as a method of regulating trusts, the President in another speech expressed his conviction that the regulation of the trusts could not be accomplished by taking away tariff protection from them. His reasoning is that some of the trusts are not helped by the tariff; that in the case of others that do profit by it, if the duties that help them were removed, their removal would do hurt also to independent producers; and that such a policy would do harm to good trusts as well as to bad ones. In other words, while many trusts profit by the tariff, they cannot be regulated by changes in the tariff.

This course of reasoning, which is true as a general proposition, but to which there are exceptions (namely, protected trusts that enjoy a practical monopoly), lands us at once into the endless complexity of the whole subject of the tariff. The moment you use it as an aid to producers (whether they be trusts or private persons) you open the way to consideration of its repeal as a punitive measure. If it be a method of help, it is also a method of punishment. When you begin to aid, you aid more persons and more kinds of production than you meant to; and when you begin to punish, you will punish more persons than you mean to. The President's argument, which is essentially sound, would, if turned around, be essentially sound also against the imposition of any protective tariff.

The practical complexities of the subject drive men mad or—into sweeping theories, and these fates are much the same!

THE PLAIN LARGE FACTS ABOUT TARIFF DISCUSSION

BUT two or three general truths may be set down with some certainty. There are but two permanent states of mind about

a protective tariff—one is a belief in it, the other is devout denial of it. A few men (perhaps many men for a short time) may hold the position that Governor Cummins, of Iowa, now seems to hold: he is a Protectionist, but he favors a reduction of certain duties. But when the decisive contest comes, men become Protectionists or Free-Traders (as far as fiscal conditions will permit).

Among thoughtful men this is now the only important difference between the two great parties. They have fought on this line of battle for many a year, and for many a year they will fight on this line again. Talk about taking the tariff out of politics is futile. There would be no politics left. As long as the Republican party keeps in power we shall have Protection, and whatever tariff changes may meantime be made (if any are made) will not satisfy the Democrats nor silence them. Whenever the Democrats again win control of the National Government, they will win it as radical tariff reformers; and they will never win it in any other way.

There may be much marching to and from and endless talk between these two camps. But they are two separate camps, and two separate camps they will remain. But for the near future no revision of the tariff need be expected.

THE POLITICAL SENSITIVENESS ABOUT TRUSTS

THERE is a strong feeling, very much wider spread than most conservative men think, in favor of the government ownership of mines—coal mines in particular. It is a much stronger feeling in some Middle-Western than in the Eastern States. For this reason it caused very general surprise that the Democratic State Convention of New York adopted a declaration in favor of the government ownership of coal mines.

The explanation is simple. The party leader who was the dominant personality in that convention has always played the game of politics as men play chess. If this move will catch votes, that is a sufficient reason why it should be made. There is no moral quality in chess-men. The influence of a moral quality in a political contest he has never seen. This plank was thought to be a good bait for a certain section of the "labor" vote. Other men know that it is mere buncombe, and that there is no more probability of the government ownership of coal

mines than there is of the government ownership of sand pits.

The meaning of the incident, rightly interpreted, is that the Democratic party in New York needs leadership, but it also shows the great popular sensitiveness about trusts.

Just as the Democratic State Convention thought this a good card to play in the present public mood, the Republican Convention gave evidence of the same sensitiveness in another way. Mr. Sheldon, who had been "slated" for the nomination for Lieutenant-Governor, was violently forced off the slate because he is identified in the public mind with the promotion of trusts. In other words, this subject is the very centre of popular excitement and suspicion.

Not only in our home politics is the trust the centre of sensitiveness, but in European discussion also. Just when this is written the news comes, for instance, that a former Italian Minister of Finance "suggests a conference of statesmen and economists of all industrial European countries for the purpose of arriving at an understanding concerning trusts and commercial treaties." He declares that customs tariffs and commercial treaties are fragile armor against trusts, which destroy natural conditions and upset the economic life of nations. He urges the triple alliance to convoke a conference to take common measures to meet the American danger." Such proposals are so frequent that they now hardly attract attention. Nor are they likely to lead to any definite action.

THE BUILDERS, THE REGULATORS AND THE ENEMIES OF TRUSTS IN AGREEMENT

THE interesting fact is made plain in Mr. Bridge's article in this magazine, that the builders of many of the great "trusts" favor a national corporation law. On the general proposition of national supervision, then, Mr. Bryan, Mr. Roosevelt and the masters of the trusts themselves are of one mind. But they are hardly of one purpose. Mr. Bryan's motive (at least, the motive of most of those for whom he speaks) is punitive; Mr. Roosevelt's motive is fair play; the trust-builders' motive is to save trouble. The men who have guided the formation of great aggregations of capital and of activity know that these aggregations are the inevitable results of economic forces. They will survive any law or any regulation or supervision that is

likely to be put into effect. But the supervision of the National Government would be very much less troublesome than the present conflicting supervision and interference of the several State Governments.

The opposition to Federal supervision would not come from the big corporations so much as from the little ones if the matter were put to a test. But the strongest opposition of all would come from that large public opinion which looks with disfavor on the extension of the power of the National Government—it is a directly political rather than an industrial opposition. The very fact that many of the great trust-builders would prefer a national corporation law and the supervision of the National Government would make the adoption of such a law and of such regulation the more difficult. A large mass of the people are suspicious of the trusts. Whatever the trusts want they are opposed to granting. Out of such a temper scientific legislation is not likely to come—at once; but it may come on the rebound.

As matters now stand, the most interesting thing to the student of public opinion is the curious fact that the makers of trusts, the regulators of trusts and the enemies of trusts all favor the same method of procedure. The trust-builders, it may be observed, have the advantage over the other classes of greater experience and, it may be, of better knowledge of how a national corporation law would work.

THE ERA OF THE INTERNATIONAL TRUST

IN the meantime, the growth of trusts has definitely entered a new era. The trans-Atlantic steamship "combine," formed some time ago, has an American charter—the amendment of a charter already existing—and definite information about it has been given to the public. It includes six lines—the White Star, the American, the Red Star, the Leyland, the Atlantic Transport and the Dominion. Each company keeps (in a way not clearly explained) its own integrity, so that the control of each British line remains in English hands; but the general company, which includes them all, exists under this New Jersey charter, and eight of the thirteen directors are Americans and five are Englishmen. The capital stock of the company is \$120,000,000, which has all been privately subscribed. Agreements satisfactory to "the

Morgans," as Mr. J. P. Morgan and his American and English partners are called in England, have been made with the British Government; and a favorable traffic arrangement, it is given out, has been made with the great German trans-Atlantic lines.

The public had already accustomed itself to the thought of this international "trust," and it has indulged in much speculation about it. The popular excitement has been very much more intense in England than it has been here, because of the fear that it might mean the transfer of trans-Atlantic shipping from English to American control. The combine seems to be a step, but only a step, in that direction.

But another international trust—more directly international and more significant—is an American-British tobacco company. The American Tobacco Company and its strongest rival in England had for some time carried on a sharp and costly rivalry in the English market. They are now combined into one company, with the agreement that the American Tobacco Company shall have the American and Cuban market, that the English branch shall have the English market, and that the centralized company will work for the market in all other countries except those, of course, whose governments have a tobacco monopoly. In other words, there is now one world-wide tobacco manufacturing and selling company. There are, of course, independent manufacturers, but this great company controls much the larger part of the tobacco trade in all countries where there is no government monopoly.

This last step in its organization is in all essential respects a repetition of the first step that was taken in the organization of the American Tobacco Company. Fifteen years or more ago, Mr. J. B. Duke, the president of this new international company, was a member of a firm of manufacturers in the Southern "golden tobacco belt." The rival manufacturers (working at first only for the American market) found competition costly—so costly that the remarkable organizing and executive powers of Mr. Duke found exercise in combining them—at first slowly, one at a time. He proved himself to be one of the great captains of industry of our time, and under his presidency the American company invaded all countries that had no government tobacco monopoly. The combination with

the big English company was an easier task than the combination of the first two factories that went to make the American company; and it was brought about as naturally and by precisely the same economic forces.

The international trust of this kind is not economically different from the trust that confines its activity to one country—if there be any that now does thus confine its activity. But great changes of some sort may follow the world-wide working of such great combinations of capital and industry. Here, at any rate, is a vast field for speculation. The most interesting fact is that both these international "trusts" have been organized by Americans and are under American control. They are the products of two strong constructive minds working under modern economic conditions. Their example is sure to be followed by others. We have definitely entered the era of the international trust.

THE COMBINATION OF ORGANIZED LABOR AND CAPITAL AGAINST THE UNORGANIZED

WHATEVER else stands still, the trust does not; for Prof. John B. Clark, of Columbia University, one of the most practical and instructive economists that we have, has pointed out the inevitable approaching alliance of consolidated capital with consolidated labor. If a consolidation of manufacturers of any given commodity can secure a monopoly of the market or an approach to monopoly, and if the labor union of that craft can secure a monopoly of that kind of labor or an approach to monopoly, there is nothing to hinder a combination of the manufacturing consolidation with the labor union. If the labor union demands an increase in wages, it is easier to add the increase to the price of the commodity than it is to suffer a strike. Professor Clark explains the situation thus:

What men in a particular industry can get depends on what the industry as a whole can get, and that depends on the prices of its products; and the disquieting fact in the situation is that where a trust alone cannot exact from the public more than a moderate amount, it can get far more when it is backed by a strong trade union. When it comes to taxing consumers, the interests of employers and employed are at one. The men may say, "Give us more pay and charge it to the public. Put up the prices of your goods"; and if this can easily be done, the employers have no strong reason for refusing to do it.

He cites the case of the glass-blowers. Skilled men at this trade are scarce and they are well organized. The manufacturers can

not get labor enough. Although the union and the employers have certain differences of their own to settle, it is to their common interest to keep at work, and they keep at work on terms which force the public to pay roundly for its glass.

If the trusts succeed in securing monopoly, and the labor unions so restrict their membership as also to secure a monopoly of skilled labor, such a combination of them against the public will be inevitable. The conflict will then be less between labor and capital than between organized capital and labor on one side and the unorganized independent producers and unorganized labor on the other. "A proletariat such as America has not heretofore seen," says Professor Clark, "may easily be created by the joint effort of trade unions that keep men out of their own fields of labor and trusts that keep down the output of goods within those fields."

When thus set forth in broad economic terms this combination of the organized against the unorganized part of the community may foreshadow dire results. But how natural it is every man may see for himself. If he be a skilled glass-blower, for instance, he wishes to get as high wages as he can—as high "as the traffic will bear"; or, if he be a glass manufacturer, he is willing that his workmen shall receive higher wages than (we will suppose) workmen at other such trades receive—provided his own profits be large and the public will pay the bill. The whole question is: How can the public defend itself?

A man who thinks to solve either the problem of trusts or the problem of labor has to make a new adjustment of his remedies before he can fairly formulate them—so swift are the changes in the problems. In fact, there are no solutions. We are rushing forward—or are rushed forward—by great industrial forces at so swift a rate that we have not yet got our bearings.

ONE TRUST BOOT ON THE OTHER FOOT

TALKING about American trusts invading Europe—in one matter at least the boot is on the other foot. To develop great transportation systems, to organize industry, to shift the financial centre to our continent—are tasks of sheer strength and are easy. But to change the centre of fashion is an undertaking of such delicacy and difficulty as our industrial leaders have never

attacked. Yet the Association of American Dressmakers in their recent convention had the courage to propose such a programme.

The Paris and Vienna gowns, we are told, do not hold their supremacy only by their beauty, but quite as much because of a long-established habit of thought. The "creations" of the famous Parisian "artists" are not things of permanent æsthetic value, and the industry undergoes changes year after year that are suggested by purely commercial reasons. But the reputations of these dressmakers prevent the "artists" of other nations from contributing anything to the greater beauty of women's dress. The art, therefore, becomes stagnant under the monopoly of the industry. Women of fashion do not receive the same value in artistic results as they would receive if there were competition for their patronage. Both beauty and profit for American dressmakers, then, require the breaking down of this monopoly.

Granted—yet how are the American "artists" going about changing the situation? If some of them were to open shops in Paris and first win great renown there, they might then convince their countrywoman of the value and beauty of their products. American painters have done this; why not American dressmakers? The way to invade is to invade. The American woman of fashion must be convinced in Paris itself. Else the French monopoly seems likely to continue indefinitely.

But, after all is said and done, it is consoling to reflect that the number of American women who wear Parisian gowns is smaller than—for instance—the number of American men who drink Scotch whisky. It would be an absurd narrowness to confine all our pleasures to home-made indulgence.

COMPULSORY PUBLICITY IN LABOR TROUBLES

ONE great difficulty—perhaps the greatest—in the settlement of labor troubles that seriously affect the public is the lack of authentic facts about them. We are constantly saying that the public is the third party involved in such disputes; but the public seldom knows the merits of any case. Consequently public opinion seldom acts with precision or force. Consider the coal strike. Millions of words have been printed about it. Many capable students of social and industrial subjects have studied it and written about it.

Yet out of the mass of conflicting testimony few men have been able to form a perfectly clear judgment; and for months public opinion exerted no pressure for its settlement. One clear-cut authoritative statement made by a Board that had power to subpoena witnesses and to compel the giving of testimony would early in the summer have cleared the atmosphere and enabled public opinion to assert itself.

The State of Illinois now has machinery for just this kind of enforced publicity; and there is no more interesting experiment in all our social governmental activity. The State Board of Arbitration, by a recent amendment to the arbitration law, is required to make an investigation and to publish the results of it wherever a labor trouble affects transportation or communication or the supply of food or of fuel, if the parties to the dispute are not willing to submit the matter to arbitration. In this way public opinion ought to get a chance to assert itself. Compulsory publicity is a most interesting experiment.

THE SUM TOTAL OF THE COAL STRIKE

IT seems safe to say that everybody has lost by the coal strike and no good has come to anybody. The miners have not won their contention; they have taxed friendly organizations of labor great sums for their maintenance; their union is not stronger; and Mr. Mitchell has not gained prestige by the long struggle. The operators have lost at least this—that a large section of public opinion has no confidence in their tact, nor is there general confidence that they can prevent recurrences of such troubles. The State of Pennsylvania has been put to an enormous expense, and Governor Stone was not prompt enough in his efforts to suppress disorder to stand out as the energetic master of a great emergency, for the feeling will always be that he waited for vigorous action until the President had "forced his hand." The President's well-meant and, we think, well-managed efforts to end the strike were not directly successful; and he did not have the satisfaction of bringing the trouble to an end. He went to the extreme limit that a very proper and eager concern for the public welfare suggested and warranted; and he provoked criticism from many sources that are friendly to him. The public has lost and lost and suffered and suffered, brought to the very verge of a

severe state of a fuel famine. Politics has gained nothing—Governor Stone is regarded as a hesitant executive, and Mr. Hill, of New York, committed the Democratic party of his State to a doctrine that weakens its moral fibre; but the popular feeling in favor of government ownership of the coal mines has undoubtedly been strengthened. And worse than all, no assurance comes out of the situation that another such strike may not occur. The question of the danger to the public welfare, both from labor unions and from organized capital that borders on a monopoly, have been acutely raised in the public mind.

Is there a moral weakness in our social and economic life that forebodes grave disaster? Are we never to find a way to make certain that the regular supply of fuel for millions of people may be assured? If we break down at so fundamental a task as this, there must be some inherent weakness.

But despair is met at last by the fact that we have not yet broken down; for public opinion did increase its pressure enormously under the action of the President (and this fact justified the President's action); and the end became visibly nearer. And it is fair to remember that the conduct of the whole business of coal mining illustrates the very worst relation of labor and capital. We have no other difficulty of the sort that is so grave. If, when the trouble is ended, our practical economists can find a way, during a season of peace, to quiet this constant menace to our social order, they will put the nation under permanent obligations to them.

THE WAY TO A BETTER DIPLOMATIC CORPS

THE reproach of our diplomatic service has long been that men are selected for all but the one or two most important posts chiefly and often only because they have rendered their party some service in practical politics or because they are politicians out of jobs. Then, with a change in party power, the whole service is upset. The men who have had experience are recalled, and a new group, without experience, are sent abroad. We have not had anything like a permanent nor consequently an experienced diplomatic corps; and in this respect we differ from every other great government in the world.

Very commendable, therefore, was the action of the President when he came to supply the place of Mr. Andrew D. White,

whose resignation as Ambassador to Germany takes place this month. Instead of appointing a man new to the service to this high place, he appointed Mr. Charlemagne Tower, now Ambassador to Russia; and in his place he appointed Mr. Robert S. McCormick, now Ambassador to Austria-Hungary; and in his place Mr. Bellamy Storer, now Minister to Spain; and in his place Mr. Arthur S. Hardy, now Minister to Switzerland; and in his place Mr. Charles Page Bryan, now Minister to Brazil; and in his place a new man, Mr. David E. Thompson, of Nebraska.

This whole group of ambassadors and ministers thus get a wider range of experience and become more useful members of the service; and to every one of these important European countries a man of experience goes. Thus gradually we may build up a diplomatic corps worthily. The principle shown in this shifting about and in these promotions is sound and right. Mr. Hardy, for instance, having already been Minister to Persia, to Greece, and to Switzerland, now goes to Spain—a continuity of service that enables a man to bring a varied and ripe experience to his task.

A WHOLESOME WORD TO THE WORLD— THROUGH RUMANIA

THE Kingdom of Rumania is a government that was created in 1876 by the Treaty of Berlin to which the chief European Powers (but, of course, not the United States) were signatory. Rumania is, therefore, the creature of the principal European Powers and they are responsible for it.

The persecution of the Jews in Rumania is more cruel and persistent, perhaps, than in any other country. The testimony is universal that they are deprived of civil rights, debarred from the professions, from the schools, from land-holding, and from most gainful occupations—even from peddling; and they have been practically expelled from the country. They come to our shores as paupers—economically and in every other way unfit material for making American citizens.

These are the facts that caused Secretary Hay to address a note of courteous but strong protest to every European Government that signed the Treaty of Berlin, and is therefore responsible for Rumania's conduct. Mr. Hay's protest stands on two strong legs—the

necessity of self-defense by the United States against such forced emigration to our shores (which is the main matter), and a declaration against the inhumanity of such persecution and expulsion. It was shrewd and well-taken and perfectly proper to single out Rumania for such a protest instead of Russia or Austria-Hungary, and very much better diplomacy, because Russia and Austria-Hungary and all the other European Governments are thus put on the defensive, not only for the conduct of the country that is in a sense their ward, but for their own similar conduct as well.

Mr. Hay's note has precedents and it has warrant in international dealing. But it created surprise at every Continental capital, consternation at most of them, and open official approval only in London; for the English Government quickly addressed a note to the other signatory Powers to the Berlin Treaty in the general tone of Mr. Hay's note. So far (when this is written) the other Powers have done nothing, although it has been reported that Rumania has ceased to issue passports to Jews, thus in one way complying with the American protest by trying to stop emigration, but in another way making the lot of the Jews in Rumania worse than ever. The definite effect of the note is yet to be seen.

But its general influence has been as wholesome as the effect of any recent international event. The Continental press has cried out loudly against American interference in the internal affairs of a European Government. The editors and cartoonists have made quite a hubbub. But there has sunk still deeper into the consciousness of Europe the knowledge that the United States, at least under the Foreign Secretaryship of Mr. Hay, is a just and active as well as powerful Government; it knows the game of diplomacy and it puts its knowledge to the highest uses. In a perfectly courteous way all Europe has been informed of our unwillingness to receive undesirable immigrants—to be a dumping ground for a population that nobody wants—and the public attention of the world has been called to the inhuman treatment of the Jews. It would be hard to do more by one polite diplomatic note or to do better things, whatever the definite result may be.

Rumania has a population of about 6,000,000, of whom about 400,000 are Jews. The State of New York has about the same number of Jews in a population of somewhat

more than 7,000,000. All the governments of Europe are stirred up about the "problem" of no more Jews than a single State of our Union peacefully contains!

The Rumanian side of the contention (for there are two sides even to questions of persecution) is that the Jew, if left with unrestricted action, so gets the better of the peasant in all economic ways as to reduce him to poverty and to keep him there. Rumanians maintain that it is an economic conflict and not primarily a religious or a race conflict.

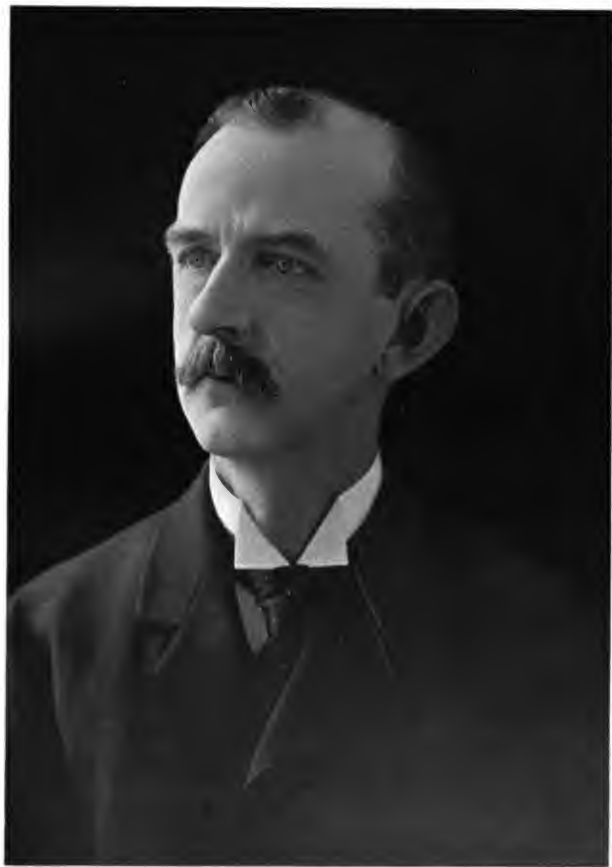
THE RUSSIAN OBLITERATION OF FINLAND

IT is a tragic thing in this age of the world for a people who have enjoyed a more or less free government to be hopelessly put back under tyranny; but this is what has happened to Finland. The worst of it is, there seems to be no help for it.

The Finns have had an approximately free government. The Czar was the Grand Duke of Finland, and he made treaties and decided war and peace and had the appointment of officials, who were to be natives. But in the management of internal affairs it was a practically independent State. The Czar was pledged to maintain this degree of independence and to preserve the language, the religion and the laws. But now the country has been made simply a Russian province. The internal affairs and the administration of justice is put into the hands of the Governor; and the autocratic method of Russian provincial administration prevails. The Governor is reported to be a peculiarly tyrannical man of low origin and brutal temper.

Remonstrance and petition have had no effect. Even the language of the people is to be set aside for Russian as far as it is possible forcibly to make such a change. Great numbers of the young men are emigrating, and industrial and agricultural disaster is threatened. The Czar breaks the solemn pledges made by the throne—at any rate, they are broken; for there is always doubt to what extent the Czar himself knows the exact character of the official acts done by the corrupt bureaucracy that is the curse of the Russian Government.

Events like this have been common in other times; but the passing of a patriotic and intelligent European people under semi-Asiatic tyranny grates on civilization, all the more because there is no help for it.



GOVERNOR W. MURRAY CRANE OF MASSACHUSETTS

WHOSE QUALITIES AS AN EFFICIENT PUBLIC SERVANT HAVE MADE HIM A TRUSTED ADVISER OF THE PRESIDENT



CHARLEMAGNE TOWER

FORMERLY UNITED STATES AMBASSADOR TO RUSSIA; NOW AMBASSADOR TO GERMANY

RAISING THE LEVEL OF HEALTH IN CITIES

ONE physical ideal that civilization works toward is the elimination of contagious and infectious diseases. Theoretically, such an ideal is attainable. But during the long period that will be required properly to educate the mass of mankind, we must be content with what progress we can make. In New York City, where overcrowding, and the presence of many ignorant immigrants from many lands, and the almost complete rebuilding of the city, overground and underground, make against a clean bill of health, there are many encouraging facts; for the municipal care of the public health under this administration is greater and wider than ever before. For instance, during the first half of this year more than 51,000 inspections of plumbing were made; 6,500,000 pounds of bad food were destroyed; 7,500 inspections of mercantile establishments were made; and 700,000 free vaccinations were given. These preventive activities raise the level of health. Eight years ago nearly 3,000 children died of croup and diphtheria; for the first half of this year less than 600; and the Health Department examined 16,000 "cultures"—that is, matter from the throats of sick children to aid the physicians in their diagnoses. It is even estimated that there has been such a reduction in the deaths from consumption in New York during the last fifteen years as to amount to a saving of 3,000 lives a year.

The head of the Department of Health, Doctor Lederle, has begun a definite method of popular education in the prevention of disease. The careful examination of school children and the exclusion of thousands of them because of contagious ailments has led to the giving of instruction to parents about the treatment of simple diseases; and it is already clear that courses of free lectures on the prevention of disease will be given in connection with the public schools. One of the best agencies for the spread of such information is the school, especially in the densely settled parts of big cities.

In larger ways, too, prevention is taking the attention that used to be given to cure. The reclaiming of considerable areas about New York from mosquitoes—for this has now been proved practicable—has lessened if not eliminated malaria, and it has diminished other diseases as well.

Such work in and about New York is

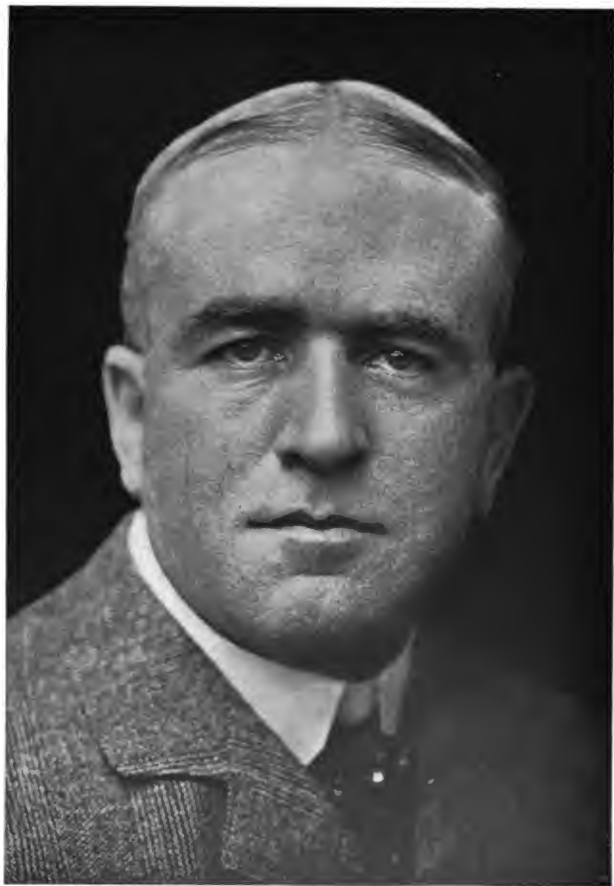
typical of what is done in other cities and other communities—preventive activity taking one special form in one place and another in another. But the cheerful fact is that Boards of Health and similar agencies are almost everywhere doing more than they ever did before. The complete success in abolishing spitting in street cars in most of our cities shows how easy a sanitary reform can be made when the municipal authorities are in earnest about it. That single simple act of decency and precaution has taught the country a lesson of far-reaching importance.

HOW WELL DO THE PUBLIC SCHOOLS DO THEIR WORK?

HOW good is the training given in the public schools and what effect does it have on character? To get a volume of evidence bearing directly on this subject, the New York State Teachers' Association sent a well-prepared set of questions to business and professional men in New York City about public school boys that they employ. Four hundred and nine answers were received, and they contained not a little interesting information.

Most of those who answered these inquiries say that public school boys now spell better than the same class of boys used to spell, and that their spelling is satisfactory for most practical uses. The school men accept this as proof of the wisdom of the present method of teaching children to spell the common words of the language rather than the "hard" words, which they seldom use; and they think that it shows that better results are got by the omission of drills in spelling isolated words. Most of those who answered the questions say, too, that the boys write legibly, and that they are quite as accurate in arithmetic as boys used to be—perhaps more accurate; but there was some criticism about their speed. According to this testimony, then, the three R's seem to be satisfactorily taught in the New York public schools—better, in fact, than they once were.

There is a significant preponderance of opinion in favor of teaching all boys the elements of bookkeeping. Nearly all the answers lay great stress on the advantage of learning at an early age how to keep accounts neatly and accurately; and a majority think that boys should be taught in school something about actual business transactions.



JAMES C. STEWART

THE AMERICAN ENGINEER WHO HAS PUT AMERICAN ENERGY INTO ENGLISH WORKMEN

There is even a strong preponderance of opinion that the public school course should aim directly at preparing pupils to earn a livelihood. But it is not meant that they should become merely commercial schools or "clerk factories"—only that the studies should be utilitarian as well as "cultural." The judgment evidently is that the two kinds of studies need not be wholly divorced, and that by right teaching both results can be gained from the same studies.

There is a decided opinion that some commercial training should be given as a preparation for the professions; and that boys who propose to enter commercial careers should begin commercial studies at fourteen years of age. As regards foreign languages, emphasis is laid on the desirability, first of knowing German, then Spanish; French comes third. The longer a boy has school training the better his chance of employment, too. There is a strong preference for high school graduates.

Concerning morals and manners—a boy's school record counts for much in his getting employment; and most men will not have boys who smoke cigarettes. The public school boys are satisfactory as regards truthfulness, cleanliness and ambition to succeed, and less satisfactory in punctuality, reliability, manners, and ability to follow instructions. They are deficient in economy of time and in economy of material. The recommendations that those who answered these questions made to the Teachers' Association may be summarized as a preference for thoroughness in a few studies rather than a smattering of many.

As things go in this imperfect world, these answers show that the public schools of New York do fairly well with the section of their pupils that this inquiry touched; and it was a piece of good sense to make such an inquiry. It settled no important questions, but it showed the practical world's appreciation of the schools and the school men's appreciation of the point of view of the practical world.

IS AMERICAN CHARACTER DECLINING?

THERE is no other subject so important to us—perhaps no other so important to the whole world—as the moral tendency of American life. Is it losing its sterling qualities under the influence of great prosperity?

Is the struggle for physical comfort and for wealth undermining it and substituting lower ideals for the ideals of the earlier and simpler days of the Republic?

The compilation of despairing opinions that appears in this magazine is worthy of notice, because of the high character and the thoughtful nature of most of the men who expressed them. They speak with seriousness and from high motives and with great sadness. But do they speak well-balanced judgments?

What is the right method to measure so large and so complex a thing as the character of a whole people? A trustworthy conclusion can be reached only by the careful study of an almost endless series of social phenomena. Such a study would embrace the whole wide range of facts that show the physical, the intellectual and the moral well-being of the population, and no man could make an exhaustive study of it. But in the census reports (to go no further) are so many evidences of an orderly social development and right-mindedness that any candid student who masters their meaning is almost sure to conclude that American character is rising, and not falling. Every such direct study lifts higher the hope of the man who makes it. The men who are in American life, and not mere spectators of it, believe that an accurate measure of the deeds done today in the homes and in the institutions, in the markets and in the workshops, in the fields and on the roads, by the active millions of men between our two oceans would show higher character and sturdier qualities than were ever before displayed by so large a part of mankind living in contiguous territory.

The mistake that the pessimists make is in their failure to take into account the moral value of successful every-day labor. There is no other discipline so good, no other force that so surely makes men strong. Men at a distance from productive work look upon it too much as a mere means of getting a livelihood. But men whose work is good, and therefore successful, grow by it; and when success is attained they have had the discipline of the struggle. This is essentially true of the mass of Americans today; for they take pride in what they do. It is fair to say that most of these despairing teachers have not, in recent years at least, gone among the masses in many States, and they are likely to get their impressions from books and from the

criminal and inaccurate columns of newspapers.

It is unfortunate, too, that most of them are teachers of youth, as instructors, or preachers, or writers. If they regard the rush and noise of modern industry as unhallowed things, and labor as a hard necessity, put upon men to earn their bread, the youth that catches their spirit has a condescending attitude toward every day life. He sees no moral value in achieving a practical success. For that kind of man the world has already gone wrong; for it is he that lacks character. He lacks stomach for the only thing that can nourish him.

The literature most needed for youthful reading today is not general moral dissertations—least of all sermons on the depravity of the Republic and on the dangers of wealth—but a social literature that shall accurately show the spirit of the Americans at work and the value of successful labor in the building of character. The great book of democracy is not in any man's library; but its generous pages open over the wide areas of our commonwealths, and it must be studied by constructive effort, and with that personal sympathy born of work with one's fellows which is the very essence of democracy.

IMMORAL LITERATURE AND AMERICAN SOCIETY

THE most skilful playwright now at work in English keeps steady to his use of immoral situations as material for his plays. Mr. Pinero is perhaps not guilty of using such material, as it is used in many French plays, for the love of it, but rather as it is used by Ibsen and the great contemporaneous German dramatists, because it is the natural matter of tragedy. The only eternally tragic things are the sacrifice of character and the sacrifice of life. The loss of most other things—of fortune, for instance, or of any mere conventional advantage—is to a modern, democratic audience a subject of little concern. The one central tragedy of life that has always appealed most strongly to pity, and appeals now even more strongly than ever, is the wreck of womanhood. There seems yet no way, therefore, if a way will ever come, for the dramatist and the novelist who would use the strongest material of modern life for his work always to avoid this subject, even if he would.

But such plays as Mr. Pinero's "The Second

Mrs. Tanqueray," and his newest play, "Iris," which turn on the fall of women, whatever their dramatic excellence, do not commend themselves to the large and wholesome American public. The skill of dramatists and of actors (or of both) interests the class that appreciates the art of it; and the subject itself doubtless attracts a class that simply takes pleasure in the forbidden; but the mass of American society belongs to neither of these classes. The puritanical attitude toward evil is passed. The indulgent attitude also is out of fashion. But it is probable that a larger proportion of Americans of this generation lead clean lives than of the people of any other country. Now, since immorality feeds on suggestion, there is a very general disapproval of books and of plays that deal openly with immoral subjects. The fiction that finds the greatest favor is morally clean. The popular magazines are clean. The American home defends itself resolutely against immoral suggestion.

It has therefore been said that American fiction and (to an extent, also) the stage are in danger of becoming pale and tame—with some truth—except that part of them which on the rebound becomes frankly gross. It is the old question whether good people are interesting—rather whether great masses of good people can permanently interest one another; or whether the irregular and the unrestrained must at times be called in.

But, since conduct is so much more important than literature or the drama, the question is really an academic one—a thing of little value. Moreover, to raise such a question with reference to the future is to judge a new order of society by the standard of an old one. If our democracy, in its full development, does at last lift the wide stretches of life to a very much higher moral level, not by suppression but by normal social development, literature and the drama and all the other arts will take care of themselves. In such a society they may find new material. Since social conditions in the United States are fast becoming essentially different from the social conditions that any great mass of mankind ever before lived under, it is fair to suppose that its literature and its art will show the change. You must look for your literature to come out of your social development, not your social development to come out of your literature. The wholesome

American public will have clean things even at the risk of tameness, but it does not grant that tameness is a necessary result of cleanness.

WHY ZOLA WAS NEVER POPULAR IN THE UNITED STATES

THE death of Zola suggests the same subject, from a little different point of view, that is suggested by Mr. Pinero's plays. His great novels (for the best of them are great pictures of life) have never found a very wide reading in the United States because the subjects are forbidding to a population that takes its chief pride in a wholesome family life. Acceptable realism among the mass of American readers is not the work of Zola, but the work of Mr. Howells. The "Silas Laphams" and their like are the American counterparts to the unspeakable family in "L'Assommoir" and "Nana." While Mr. Howells is no longer among the most popular novelists that we have, and while his philosophy of fiction has not found general acceptance (for we read Scott—tiresome passages and all—in spite of him), it remains true that he more accurately represents the American moral conception of fiction than any other writer who has produced a large volume of excellent work. The long shelfful of his books are all about good people—tame and pale, some think, as they are exemplary. But these books are all written with grace and literary good breeding and an unflinching serenity of style, and not a line in any one would bring a blush to any cheek in any company. They are a large part of the literature of their time.

While Zola can never be Americanized, Mr. Howells's work will stand in fiction for a long time, as Longfellow has stood in verse, as the best response to the moral demands for literature by a democracy that, having thrown off its Puritanical mood, is yet unwilling to give free scope to suggestion. It prefers morality to tragedy, even at the risk of getting the commonplace. And it may get the commonplace from all except the greatest hands. But the realism—the literalism—of both Zola and Mr. Howells perhaps belongs to a literary mood that has passed.

GUESSING AT THE POPULARITY OF NOVELS

THE novel has become two different things and serves two different uses. It may be a worthy and important kind of

literature, or it may be a mere means of idle amusement. The novel that has literary value is, of course, also a means of enjoyment and of very keen enjoyment. But a novel that is a mere diversion and nothing more may achieve a great popular success, as a "topical" song does at a cheap theatre; and it has no significance whatever except that it shares for a few months the time that might otherwise be given to reading newspapers or to playing ping-pong or spent in idleness. Yet the extraordinary success of a few such novels has a tendency to disturb the literary equanimity of serious writers and of publishers. The disturbance is made the worse when it happens once in a long while that a novel of real value also achieves an enormous popularity, as it is undeniable that an occasional really worthy novel does.

But a few great facts are worth holding to. The popularity of a novel means neither that it has or that it lacks serious merit; and it is a short-sighted writer or publisher who draws either conclusion. Good fiction will have recognition—of this there is no doubt; and this is the only fact that it is worth while or profitable to remember. But a novel of no serious merit may or may not become popular. There is no certainty about it. Only one in a thousand has the quality that carries it into favor, and the other nine hundred and ninety-nine represent wasted labor and false hopes of author and publisher alike.

The writer who sets out deliberately to produce a book that shall achieve an unusual popularity is not as likely to succeed as the writer who goes forward and honestly does the work that is in him. Nor is the publisher as likely to succeed who works with a set purpose to force a particular novel on the public. He will fail twice or thrice or a dozen times for every time that he succeeds. Both writer and publisher, too, will be likely to forget real literary values, and they will soon find themselves on the level of the composers and publishers of popular songs whose value is of the slightest and whose vogue is but ephemeral.

But the main point suggested by Zola's death and the discussion of fiction that it provoked is that whatever be the silliness or the wisdom of American novel writers and of American publishers, and however great be the appetite of the public for fiction, the stories that are most popular in our democracy are morally wholesome

THE REAL RULERS OF RUSSIA

AN EXPLANATION OF THE LIMITATIONS OF THE CZAR'S
POWER, APROPOS OF THE ABRIDGMENT OF FINLAND'S
FREEDOM—AN ANALYSIS OF RUSSIAN CHARACTER

BY

WOLF VON SCHIERBRAND

AUTHOR OF "GERMANY OF TODAY"

WE, Alexander III., Czar of all the Russias," is the formula with which the mighty Emperor signs his ukases to his fivescore millions of more or less obedient subjects. But the phrase carries an exaggerated implication: that the power of the nominal ruler of Russia, although not narrowed by any constitutional barriers, is in reality not nearly so absolute as the phrase sounds. The limitations of his power are variously stated to be due to nepotism, corruption, nihilism. This, however, is so far a mistake as to confuse causes and effects.

The whole world applauded when Alexander II. decreed the abolition of serfdom; and those not acquainted with Russian life were amazed when the hoped for results did not follow. When Alexander III. declared solemnly after his accession to the throne that he would reign strictly according to law, and would deal out his rewards and punishments in the same manner, even thoughtful Russians hoped for better government. But Russia remained as she had been. None of the time-honored abuses were reformed nor even appreciably lessened.

The reasons are simple. The Czar is not the sole ruler of his people. Three other autocrats divide with him the power, and his share of it is not the largest. Despite all his efforts to assert his own as the sole authority, he is handicapped, even almost paralyzed, by the greater power of his co-regents. Who are these fellow-despots? It may sound like a paradox to say that they are three words in the Russian language—*Nitshewo*, *Winowat*, *Natshai*.

The first of these tyrants—*Nitshewo*—means simply *Nothing; never mind*. He is the real autocrat in the great empire. The word means many things, but the meaning that has direful importance for the whole nation

corresponds to our "What are you going to do about it?" If you are a foreigner and a visitor in Russia, you will be amused by the frequency with which this word recurs in a conversation carried on between Russians, no matter of what rank or status in life. According to the intonation, the gestures or the facial expression of the person using it, it acquires constantly a different meaning. Two merchants meet in the street.

A.—"How is your health and that of your family, Nicolai Ivanovitch?"

B. (cordially)—"*Nitshewo*" ("Quite well").

A.—"What do you think of the chances of a war?"

B. (shrugging his shoulders)—"*Nitshewo*" ("Don't know").

A.—"Do you think our new Governor will benefit trade in this section?"

B. (shakes his head)—"*Nitshewo*" ("I'm doubtful about it").

A.—"I understand you met with severe losses on 'change yesterday."

B. (sadly)—"*Nitshewo*" ("Can't be helped").

A.—"Well, I'll be able to meet my engagements on settling day."

B. (obligingly)—"*Nitshewo*" ("I'm quite sure of that").

And thus the conversation runs on. There is no harm in so useful a word, you'll say. But there is. This careless dismissal of every disquieting thought with a *nitshewo* is transferred to the most serious duties and enterprises. When, during the last war with the Turks, the contractors furnished the poorest fare and the most miserable clothes for the troops; when, during the passage of the Balkan Mountains, whole companies fell right and left into the bottomless abysses, the superior officers had for all these woes and wrongs but one answer—an indifferent shrug and a "*nitshewo!*"—"Can't help it—go on!"

When we turn to nihilism, we find again the reflection of our own acquaintance—*nitshewo*. Not even the *Kismet* of the Turk, which bids men resign themselves stoically to the inevitable, is to be compared with *nitshewo*. The essence of it is disgust with everything in existence, negation of good and evil alike. For the believer in this word there is neither murder nor devotion, love nor hatred. Russian youth is not seduced into extreme but honest convictions by its ardent love of liberty—as is the case in other countries—but is poisoned and stunned by the baleful influence of *nitshewo*, which honeycombs the body politic and unsettles society. And it is also *nitshewo* which makes the Russian judge send the convicted nihilists in droves to the wastes of Siberia or to the gallows. Why not? There will be enough subjects left for the Czar. *Nitshewo*.

The other two despots, less tyrannical in appearance, aid greatly to make the power of *nitshewo* so absolute. The first of these, *winowat*, means literally, "I am guilty; I own up to it." It is another cancer in the national character of Russia. At first it might seem as if the frequent use of this word were a proof of the truthfulness of the Russian, but it is not so. The Russian who has been guilty of a crime and says, when confronted with the proofs, "*Winowat*" ("I am guilty")—means by that merely: "What is the use of my denying it? If I did so I should be bothered all the more; I should have to stand an elaborate trial and that's a great deal too much trouble. *Nitshewo*, let's simply say: *Winowat*. That ends the whole business, and I have no further bother." There is no such thing as remorse or grief in this attitude *winowat*—that settles it; that is all the satisfaction you need expect. No matter if he has killed your son, dishonored your family or broken your choicest vase, *winowat* is the only balm applied; the only medicine taken for a troubled conscience.

The injury this word does is not, however, to be compared in extent to that wrought by the third one of these despots—*Natshai*. No matter where in the boundless land of the Czar you may be, you will meet with the same keen appreciation of the beauties of *natshai*. Originally the word was a compound and meant "for tea," like the French *pourboire* (for drink). But its first sense has been broadened and extended, until its significance is multiform. Ordinarily, it is true, *natshai*

is used, as "for vodka" (corn brandy) instead of as "for tea." But as the word creeps into higher and still higher strata of the social structure, it means more and more. It is, in fact, the very essence and personification of the national (not merely official) corruption. There is no better way of illustrating the all-pervading influence of *natshai* than to describe briefly a typical day in the life of an average Russian.

Gawril Nicolaievitch, a well-to-do merchant from Kiev, has come up on a business trip to St. Petersburg. With some degree of irritation he struts beside the burly porter whom he has just engaged to carry his small leather trunk and valise to the fiacre stand outside the railroad depot. The man allows every other passenger and every other porter to pass him by. Perhaps it is his excessive modesty; perhaps it is a lack of "tea." Gawril Nicolaievitch becomes convinced that he will hardly catch even the last one of the sleighs, which is always drawn by a lame or otherwise incapacitated horse, and thus spend an hour on the trip to the hotel. Suddenly he dives into his pocket, brings forth a coin and puts it into the hand of the porter and—watch the result! The meek porter is instantly transformed into a daring hero. Brandishing his trunk high above his head, he chases the crowd before him. Gawril follows and has obtained a moment later a seat in a good sleigh.

For taking the merchant to the hotel the driver demands twice the usual fare, and swears by all the calendar saints and by the grave of his mother that this is the lowest figure. Gawril offers less, and a compromise is finally made. The driver in his long blue coat has made a poor bargain, and his style of driving shows it. Although the usual speed of vehicles in St. Petersburg is like a flash, this man's horse crawls along at a snail's pace. The weather is intensely cold, and Gawril soon becomes chilled to the bone. "Quicker, fellow, and I'll give you *natshai*!" he says. "Good, little father!" replies the driver; he whistles to his horse, and the sleigh shoots forward.

Arrived at the hotel, he thaws out in his room and then starts forth on business. Before he leaves he says to the doorkeeper: "Don't let me wait to-night on my return. It may be late, but you will get a *natshai*." The doorkeeper bows low and remarks: "It is very

cold, little father. Do you wish to find a good cup of tea when you come home?" Gawril nods assent, and then he goes to find his customers, with whom he has business to transact. The first one is not in, and his clerk cannot tell where he is. All at once a rouble note lies before the clerk on the desk, and just as suddenly he remembers where his employer is. He himself is unable to leave, but the errand boy might be sent for the merchant. This is done, and five copeck do for the boy.

Soon the merchant appears and welcomes his visitor. After a few introductory phrases, they go to the *Trakfir* (the "tea-house"), and there they may be seen seated behind a steaming *samovar*, flanked by several bottles of *vodka*. But as yet business has not been mentioned at all. When a Russian intends to buy a dog he begins the proceedings by assuring the seller that he has never in his life harbored the intention of buying a cat. Thus it is in this case, too. But at last the haggling begins. Gawril asks 20,000 roubles for his goods; the other bids 12,000. After a while the figures contended for approach each other more nearly. Finally a point is reached where neither will yield another rouble to the other. The tea and the *vodka* have both been put where they "do the most good," and now the two merchants gaze at each other silently. At last Gawril pulls himself together and says: "After all, I'll give you five rouble, *natshai*, and that we will drink up together. But that's the best I can do. Is it a bargain?" The St. Petersburg man, overpowered by so much good nature — and *vodka* — mutely squeezes Gawril's hand in token of surrender, and thereupon the latter sings out, "Another couple of bottles and a fresh *samovar*!" Thus the business is concluded.

It has grown late when Gawril parts with the merchant. Shall he now go home? Never! But where can he go? He looks about for a cab. In vain; not one is in sight. But hold on; there he sees a policeman strutting up and down majestically. But how can he get to him? The *vodka* begins to work its spell, and his legs are none too sure. Gawril knows a way. With stentorian voice he calls out: "Officer!" That functionary at once obeys the call, but he does it with a mien that bodes no good to the ruthless disturber of the public peace. As he approaches Gawril and, by the dim glimmer of the lantern,

sees the costly quality of his fur coat, a benignant smile takes the place of his scowl. "Why do you let me wait so long?" growls the Kiev merchant. "Tell me where I can find a theatre—where I can laugh and have some fun. I want to enjoy myself."

"Ah, well, that's a long distance off," says the officer doubtfully.

"Nonsense," Gawril exclaims; "take me to a cabman and tell him the address of the theatre!"

The officer feels a rouble note glide into his hand, and immediately, with the tender solicitude of a mother, he escorts the half-tipsy stranger to the nearest fiacre stand and helps him into the sleigh. Then he calls out a few words in a gruff voice to the driver salutes the merchant very politely, and a moment later Gawril is on his way to the temple of amusement. The ride is a brief one, and although on his entering the theatre he is told with a profound bow that all the places are taken and there is not even standing room left, we soon see Gawril seated on a comfortable chair behind the scenes. *Natshai* has once more done its work.

At five o'clock in the morning Gawril returns home, sips tea with the pleasure which all Russians seem to feel in drinking it, fortified with another stiff admixture of *vodka*, and then with the assistance of the doorkeeper, who has been faithfully keeping watch for the traveler, he falls asleep, dimly conscious of the conviction, before closing his eyes, that nowhere else the world over is life half as pleasant as in "Holy Russia."

The following anecdote, which passes current in Russia, is a neat bit of persiflage on the *natshai* nuisance: After the Lord had created the world and the nations to people it, he asked of each of them if they still had an unfulfilled wish. They were all satisfied except the Russian, who, taking off his cap with a polite bow, said: "Oh, good Lord, you see you have made such a nice, handsome, good-natured fellow of me, that I think you might start me off with a little *natshai*, if you please!"

And this, the third autocrat in the land of the Czar, is perhaps the mightiest of them all. Without *natshai* you will be unable to accomplish anything in Russia, all the orders and the decrees of the nominal Czar at St. Petersburg to the contrary notwithstanding.

THE REBUILDING OF LONDON

HOW THE METROPOLIS OF THE WORLD IS BECOMING MODERN—THE DIFFICULTIES OF REMODELING THE CENTURIES-OLD CITY—THE PART AMERICANS ARE PLAYING IN THE CHANGES—RAPID TRANSIT AND "SKY-SCRAPERS" IN THE MIDST OF LONDON'S TRADITIONS

BY

CHALMERS ROBERTS

WHILE London is not torn up from end to end for a "quick change," as New York is today, the city is gradually becoming modernized. It is merely a new comparison of American and English methods—the former rapid and radical, the latter slow and conservative. When Queen Victoria came to the throne the London of the Stuart kings was almost as they left it. Her death marks another period in the life of the city, for with all its progress during the last sixty years London remains perhaps the most backward of civilized capitals. It is not difficult to name many reasons for this tardy rejuvenation. The disinclination to take advantage of latest municipal inventions is but a reflection of the mind of the man who lives there. The enormous growth of London has been out of all proportion to its means or its methods of government. And anything like a general scheme for its rebuilding could not be thought of until some sort of consolidated municipal government was arranged—an accomplishment only of the most recent years.

It is not fair to make disadvantageous comparisons with modern cities which have been created by municipal experts. In their perfection they are apt to forget how like to a day their lives are as compared to the lives of her they mock. The population of ten millions must content itself with the same streets which served the population of one million. No scheme of the many proposed and the few in execution has ever devised substitutes for the Strand or Fleet Street or the many tunnel lanes of the city proper or for Bond Street or Piccadilly. These thoroughfares may be widened time and again and yet be far too narrow to serve the multitudes which persist in traversing them. One may compel the heavy traffic to take side streets, but the free people go where they

will, and they elect to go by the route where the crowd is. It seems almost too much to expect a municipality to devise means of extricating them from the tangles they persist in getting themselves into. It is notorious how much dwellers in slums resent their clearance and the erection of model dwellings. There is never a public improvement projected but raises opposition. The builders of that most perfect of underground railways, the Central London (Tu'penny Tube), had not only to contest innumerable cases which complained of the vibration caused by the tube sixty feet underground, but there are now actually pending suits based upon mining claim laws charging them with the theft of clay which they removed in making their tunnel and failed to pay for. It is a thankless task to provide town folk with fresh air or light or room or means of transportation. It is quite useless to plan Utopian model cities in a wilderness of fresh air until some means are found to make the multitude forsake its grimy warrens.

Anything like a general scheme for the rebuilding of London was impossible so long as the antiquated system of government struggled with its increasing burdens. But as soon as what is known now as the "metropolitan district" was placed under the control of the London County Council, the breath of invention and improvement was felt. London began to hear and to see how far behind it was in comparison with other cities, that it was probably the most irregular, inconvenient and unmethodical collection of houses of them all. A comprehensive plan for the transformation of Paris has been gradually developed since 1848; slums have disappeared from Berlin since 1870; eighty-eight acres in the centre of Glasgow have been remodeled; Birmingham has transformed ninety-three acres of squalid slums into magnificent

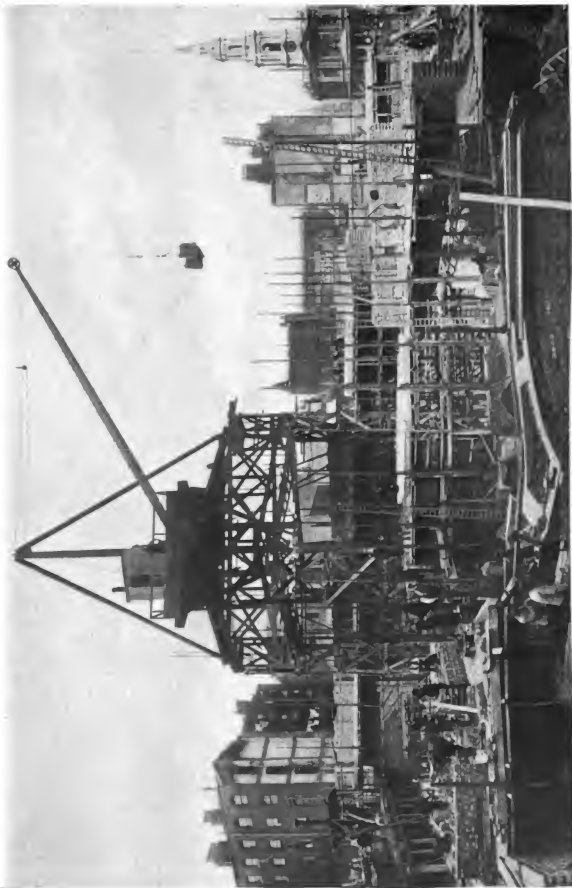
streets flanked by architectural buildings; Vienna, having completed her stately outer ring, is about to remodel her inner city. In London alone there was no organized scheme to make it worthy its position as the first of municipalities. And there is none now. But the County Council has speedily directed all its energies to the remedy of the most crying needs. Systematization and beautification may come later.

It would be quite impossible even to name the many plans for the improvement of London which have recently been laid. Over all the vast territory new things are taking the place of worn-out old. Much, for example is being done to open up the congestion of surface traffic, the condition of which has come to be synonymous with the very name, London. Old streets are widened and new ones are cut directly through long squares of buildings. One of the earliest acts of the County Council was to make provision for the widening of the Strand. A careful survey was made both of the ground and the ownership of the space needed. In many cases long leases had either to be bought out or waited for. Wherever new building permits were issued the new line of abutment was insisted upon. This is the reason the average American visitor wonders at the irregular frontage of Strand buildings. From the earthquake-like condition of this most important of all London streets one would have imagined that the whole route was soon to be opened. Yet after a wait of ten years and untold expense the newly widened space is only about the length of four average blocks in Fifth Avenue, New York. From Wellington Street, the entrance to Waterloo Bridge, east to the Law Courts, there will be a fine Strand, one hundred feet broad, extending quite around both churches of St. Mary le Strand and St. Clement Danes. These beautiful examples of old ecclesiastical architecture stand clear and free of outline on islands with scarcely an entrance refuge. This change has involved the complete destruction of two narrow blocks of old gabled buildings bounded by Holywell and Wych Streets. Antiquarians deplore their destruction, and no book lover who ever visited London can forget Holywell, known as Booksellers Row. Springing here from the Strand like a three-pronged fork will run the new avenue quite through to Holborn, the west prong begin-

ning at Wellington Street and the east at St. Clement Danes. Each of these, eighty feet wide, will join, at a point near the location of the old Olympic Theatre, the stem and centre prong of the fork, which will be one hundred feet wide, to Holborn and even beyond by Southampton Row to Theobald's Row, the main thoroughfare to Northeast London.

This beautiful new avenue, with never a public house (saloon) on its length, will be worth in health alone much more than it cost. It offers, moreover, a fine architectural opportunity—close supervision will be exercised over buildings here. Considering the magnitude of the improvement, its cost will be very moderate. The first cost will be about £4,500,000, but it is expected to recoup in leases all but about £700,000. Between the prongs of this fork will be some of the most interesting new buildings in London. The advantage of the site did not remain long undiscovered. At the point of the west prong stood the old Gaiety Theatre. This was bought and doomed to destruction. Farther on, directly opposite Somerset House, it is proposed to erect the great steel shop-and-office building about which so much has been said and written. This will be the first in London of a type well known in America. It has been carefully designed in the same style of architecture as the venerable pile across the way.

Farther east the Strand shows in places sporadic attempts at widening, caused by buildings erected since the new line was laid down. The next largest scheme for street improvement is in Piccadilly. Here the block is one of seasons, and not perpetual like that in the Strand. One may almost read the fashionable life of London by the condition of traffic in Piccadilly. During the last year one long stretch was made broader by taking into the roadway a slice of the Green Park from Constitution Hill gate past Hamilton Place, a part almost impassable during an afternoon in the season. At this point on an ordinary spring day more than 2,855 vehicles have been counted during one hour. The County Council is seizing every lease as it falls due and promises in a comparatively few years to begin work here, though there was great opposition to this "sacrilege" to one of the town's too few parks, and further plans for widening the



CLEARING A GAP FOR NEW BUILDINGS AT THE WEST END OF THE CRESCENT
Demolishing and building simultaneously



TEARING DOWN OLD HOLYWELL STREET

street from the Green Park to Piccadilly Circus must wait.

Another splendid street will be opened when the Thames embankment is completed between Chelsea and the Houses of Parliament. This beautiful boulevard will then run uninterrupted, save by the buildings at Westminster, for miles with a park on one side and the Thames on the other. It has become the recognized site for public buildings, and every year sees additions to the long line. The last decided upon is the new County Council Hall, which is to give a home to London's new governing body on the Adelphi Terrace, just east of Charing Cross. This new extension will give a proper situation to the Tate Gallery, full of the works of modern painters and up to now lost in Chelsea slums. It will also show off to great advantage the model workingmen's dwellings built in this neighborhood by the County Council.



ALL THAT IS LEFT OF THE OLD OPERA COMIQUE

The great English railways have already long ago reached the limit of their ability to cope with suburban traffic in and out of London. The greater part of the toilers have been dependent upon horse-tramways and 'busses. Because of the short-lived franchises granted them, no surface trams can afford to create suburbs. They must await demand. They are, moreover, so subject to ordinary street difficulties as to be slowest at the very hours when they are most needed—early morning and late evening.

The old underground railway was designed to be complete in an inner and outer circle, but the outer circle was found to be insufficient before it was ever built. And the inner circle nowadays does not even touch what



THE DILAPIDATED STRAND

might be called suburbs. Yet so long as it was without competition the two companies owning this system drew great dividends and ignored the demands of their dependent patrons for better service. Not until competition arose in the shape of the Central London electric tube railway did the directors of the District and Metropolitan lines bestir themselves. And even then their stirring took the shape of a kind of panic over lost receipts, with no idea of the necessity of spending money to save trade. They did not dare before to suggest any expenditure without promising increased profits. Mr. Yerkes's action in acquiring control of the District Underground brought a flood of underground railway schemes forward. Parliamentary committees have been kept busy deciding between rival schemes. They have been careful to reserve all manner of rights to the Government, refusing, for instance, to grant any route unless the proposed com-

pany agreed to provide and maintain a subway for pipes and wires along its line. This is an effort to unravel the tangle of such things which the least upturning of the streets shows. These lines are also refused complete independence of each other, and are compelled to arrange transfers and joint time tables. There are now fifty-two miles of deep railways running and authorized, estimated to cost £500,000 per mile. The great objection in London to shallow tram-subways, such as are used in Paris and building in New York, is the necessity of torn-up streets for a long period, as well as the difficulty of disposing of the soil so near the surface. The tubes, after the fashion of burrowing animals, must necessarily dispose of their soil at the end of their tunnel only. It is safe to predict that in ten years it will actually be possible to traverse London by public conveyance more quickly than one could walk or go in a cab. Now, for lack of means, or of cooperation when there is means, the task is hopeless.

While the tubes are burrowing under the river, new bridges are building, and even a foot passenger tunnel has just been opened, so great is the stream of workers which must cross over twice a day. New bridges are building at Vauxhall and Kew, while that planned to be built at Lambeth is said to be as notable a combination of art and utility as

the famous Alexander III. bridge in Paris. And there is in active operation a scheme for the widening of famous old London Bridge by cantilever cornices to carry all of the foot traffic. Thus the old foundation bridge of the town by the Thames keeps progress with its growth. For it is known definitely that

both Roman and Saxon bridges existed here, and that the first stone London Bridge was built here in 1176. For six and a half centuries this old structure had houses on either side of the roadway, much in demand for shops, with a chapel on the central pier for saints, and stocks and a cage at either end for sinners. The present beautiful bridge was opened by William IV. in 1831. Experts in the problems of traffic say that the new Strand to Holborn Avenue will compel the construction of another bridge between Blackfriars and Waterloo. Certainly something must soon be done to relieve Waterloo, the unceasing stream which crosses here being the chief cause of the unending block in the Strand at its approach.

Beyond the bridges comes that widening



TUBE SIGNAL STATION



HOW ONE SIDE OF THE STRAND IS BEING SHAVED AWAY

At St. Mary's in the Strand



THE NEW GAIEITY THEATRE BUILDING

of the Thames called the Pool of London. Here is where the city of ships lies, and here are the great docks which fifty years ago were the wonder of their time. Not so now; they and the system under which they are run have been so seathingly condemned by a committee of inquiry, after a year of investigation, that the whole country is aroused to their improvement.

Parliament is busy also with London's water supply, mainly concerned with the consolidation of many companies, for the quality or quantity of the water leaves little to be desired. But the gradual growth of the rights of water supply is a very attractive story. Some of the old companies run back to the days of the Tudors, and it is needless to say that their shares are of almost inestimable value. It is interesting also to follow through old streets the course of former little rivers and rills, all of which have been turned into drink and wash for the thirsty, dirty monster which has devoured them, leaving only a corner or an alley with their name for a monument.

As for the new buildings which are planned and in course of construction, one can scarcely find space to name them all. The great Roman Catholic Cathedral of Westminster has risen within a few squares of the Abbey, the heart of the Church of England. Like most great London buildings, it seems hopelessly out of place, fitting surroundings having been sacrificed for central location. It is quite hidden away out of dingy Victoria Street, and would never be found but for its mighty campanile, three hundred feet high. It is very different from recent Gothic and Renaissance church architecture, being one of the few modern Byzantine buildings in the West. It will soon be opened for use, with no attempt at first to cover the rough brick of the interior walls or the cement of the domes, all destined later for mural painting and mosaics. The largest arch over any known church doorway will admit ten thousand worshipers to ample accommodation under a central dome one hundred and twenty feet high. The plan dispenses with stained glass windows—a wise arrange-



REBUILDING VAUXHALL BRIDGE



FAMOUS NEWGATE PRISON

The march of improvements will wipe it out and replace it with a court-house



THE NEW ROMAN CATHOLIC CATHEDRAL
A few blocks from Westminster Abbey

ment in dark London. Twenty-nine marble columns support aisles, galleries, and arches of transepts, with bases of Norwegian granite and capitals of white Carrara elaborately carved.

Another scheme of magnitude has just come to light in the purchase of the Royal Aquarium by the Wesleys. The character of the place will be quite transformed, and

even Mrs. Langtry, who has built a beautiful theatre on adjoining leased ground belonging to the plot, will either have to sell or buy. The Methodists cannot see their way clear as theatrical landlords. The new building, not yet designed, will comprise a connectional centre for the Methodists at which conferences and congresses will be held. There will be a great hall holding 3,000 people available for services on Sundays and public meetings, a smaller hall to hold 1,000 people, Y. M. C. A. and Y. W. C. A. rooms, numerous committee rooms and a library.

Famous Old Bailey Prison has been demolished to make way for the new palace of justice—the Sessions House of the City of London. Few visitors to London miss this site of many tragedies, its walls hung with rusting manacles and hobbles, and its halls complete with pillories and stocks and whipping blocks and implements of torture. So many incidents are located here that one can scarcely choose for mention. For me, I always first remember that here in 1660 the common hangman burned Milton's works. In 1783 it succeeded Tyburn as a place of execution, and in 1868 knew its last gallows. Here the Lord Mayor held his quaint court for the trial of offenders within the city wards.

Leaving unmentioned all the many libraries, baths, hospitals, hotels and business premises designed by the most eminent architects and engineers of the day, there is left the improvements in the great governmental space of Whitehall. When its new



THE FIRST AMERICAN STEEL FRAME STRUCTURE IN LONDON
Now building in the Strand



THE NEW GOVERNMENT BUILDINGS

The arch connects the new with the old buildings to the right

buildings are finished will stretch between Trafalgar Square and the Houses of Parliament almost every department of the British Government. Some one has called this short street the shuttle of the Imperial loom. It will be a court of honor worthy of the Empire's capital. On the left as one enters from

Parliament Street will rise the new home of the Education Department and the Local Government Board, designed in harmony with the Home Office and connected thereto with an archway bridge. Farther on, opposite the ancient Horse Guards and next to Inigo Jones' Banqueting Hall, the last



THE NEW WAR OFFICE

Opposite the Horse Guards, in Whitehall. To the left is Inigo Jones' Banqueting Hall, from whose window Charles I. stepped to the scaffold



GALLERY FOR PIPES AND WIRES BENEATH THE STRAND

remnant of the old palace of Whitehall, rises the new War Office, and farther on, on the opposite side, will be the new Admiralty, part of which is already occupied.



A TRAIN FROM THE TU'PENNY TUBE

All these improvements and new buildings have been those of utility, but at the juncture of Whitehall with Trafalgar Square we come to what is perhaps the most striking change



AN AMERICAN CAR FOR THE TUBE

of all, and one which is concerned only with beauty and sentiment. It is proposed to open a wide avenue from the square into the Mall as a fitting approach to the beautiful memorial which the people of all the Britains are to erect to their great Queen. At first in their grief her people seemed to think that none fitting could be erected. But their gratitude found material expression.

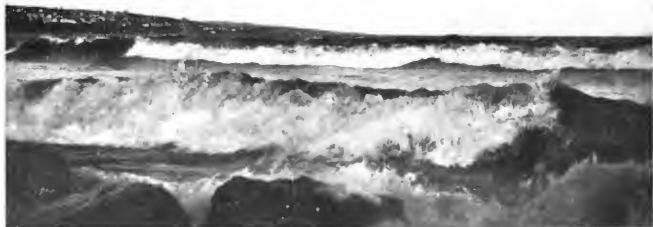
A monumental beneficence in a charitable age might not long be associated closely enough with the object for which it was to be designed. So a purely artistic memorial was finally decided upon, long after the funds contributed had reached more than ample proportions.

Whether this work, finished so far as plans are concerned, has realized the dear desire of those who wished it into being must be left for future generations to decide. It is not easy with the best of intent to command inspiration, nor can the greatest wealth of money succeed in buying what is often achieved out of the direst poverty.

It is only to be wished that the home built for her in her early years, Buckingham Palace, were a worthier background for her monument. Perhaps the memorial will so accentuate its ugliness that another generation will demand its reconstruction. For it is to be honored with an approach which competent critics declare to be without equal in any recent efforts at memorial and municipal decoration.



A STATION IN THE TUBE



SAVING THE FISHERIES OF OUR INLAND SEAS

MORE THAN ONE HUNDRED MILLION POUNDS OF TROUT AND WHITE-
FISH TAKEN FROM THE GREAT LAKES IN A YEAR—GOVERNMENT
RE-STOCKING TO REPAIR THE RAVAGES OF WANTON FISHERMEN—
FRY KEPT IN WATER AT $32\frac{1}{2}$ DEGREES—METHODS OF FISHING

BY

W. S. HARWOOD

(Illustrated with photographs by the author and others)

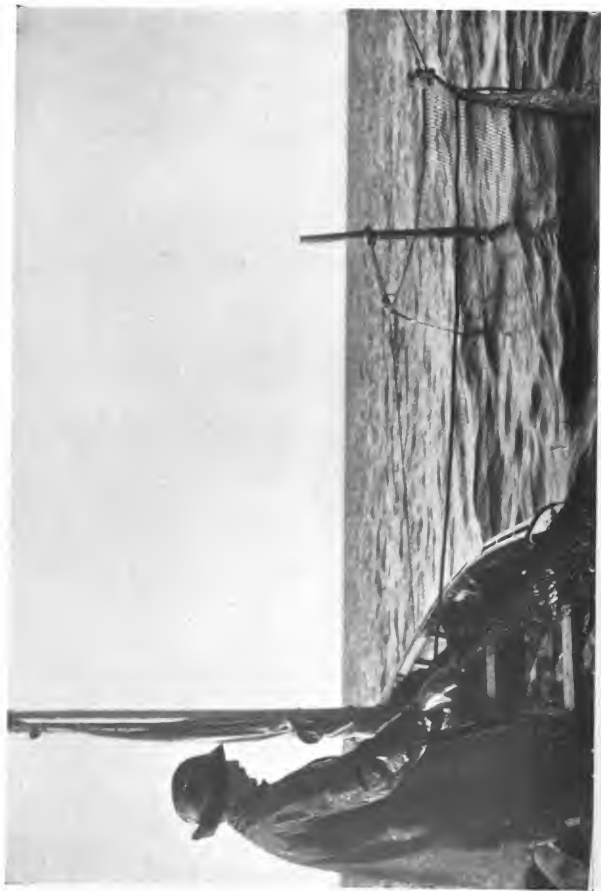
TO re-stock with fish a trout stream or a bass pond is an easy task. To re-stock an inland sea 400 miles long, 1,500 miles in circumference and averaging 1,000 feet deep, even one such sea, is Herculean. And yet so well does the Government Fish Commission do its work among the Great Lakes—all five of them—that the following remark fell one day from the bronzed captain of a Canadian fish-tug as we bowled along the northern shore of Lake Superior:

"Four years ago the whitefish in my territory were played out. Your American Commission put young fry in the territory. This season I have had one of the best whitefish seasons in fifteen years. They were four-year-olds. There wasn't no luck in that, mister."

The five great lakes are of greater importance than most Americans, whose knowledge of them is confined to the geography of childhood, appreciate.

Through the canals at the Soo, the eastern outlet of Lake Superior, passes a far larger volume of freight—larger now by many millions of tons a year—than passes the Suez, formerly the world's standard of canal traffic. The traffic of the Soo now exceeds twenty millions of tons a year.

But beyond their importance as a vast highway of traffic, and their value, which is great, as a conservator of national health, through outings, lies their food production. Like the prairies, these lakes are a mighty food reservoir. Millions of pounds of fish have been caught annually in these lakes; millions of dollars are invested in securing the catch. During 1899 the catch was nearly one hundred and fourteen million pounds. The herring, a species of whitefish, now leads, but the common whitefish and the lake trout are the most prized, and the ones most in danger of extinction. Each one has



LIFTING A POUND-NET IN A HEAVY SEA

The catch weighs over half a ton



FASTENING A NET AFTER LIFTING

its supporters as a food fish. The whitefish, firm of flesh and eminently nutritious, coming to the table broiled or baked or planked, is a toothsome fellow, fit for the plate of the daintiest epicure or the hardiest lake-farer. The trout, pinker of flesh, is not less nutritious.

The fish are caught in huge nets mainly by Americans, mostly in the open lake season,

though there is considerable fishing through the ice. The fish find a ready market at all the towns and cities bordering the Great Lakes and even far inland.

But for the aid of the National Government, the Great Lake fisheries, engaging thousands of men and producing annually millions of dollars' worth of food, would soon become practically extinct. The decrease in the catch long since reached the point of peril.

In Lake Ontario the catch of whitefish, by many esteemed the choicest of our lake fish, fell off from 1,156,200 pounds in 1868 to 126,650 pounds in 1895, and the catch of trout for the same period from 612,000 pounds to 109,300 pounds. In Lake Erie, the whitefish, once the principal catch of that lake, exceeding many times over the entire output of other fish, fell away to nine per cent. of the entire catch. The reduction from 1885 to 1893 was sixty-three per cent. In 1880 whitefish held first place in the catch of Lake Huron, but in ten years it fell back to sixth place. The trout of this lake in 1803 yielded



LIFTING A POUND-NET

The fish are to be scraped out and thrown into a fishing tug



WEIGHING A SHORE FISHERMAN'S CATCH ON
THE TUG

over 3,500,000 pounds, ninety-two per cent. of the entire catch of that species; in 1899 the catch had fallen to 1,879,400 pounds, a loss of over 1,600,000 pounds. The catch of whitefish in Lake Superior has also shown a steady and discouraging decrease from year to year. The main causes of this falling off are thoughtlessness, enterprise and greed.

When the rapid decline of the fisheries be-



AFTER THE MORNING CATCH
The trout weighs about 20 pounds

came apparent several years ago, so marked that extinction was promised, the matter was referred to a Joint Commission of the United States and Canada, which reported in 1896.

From this investigation it appeared that the fishermen were not observing the close season, when the fish spawn; that in many cases they were using fine-meshed nets; that the lakes were sadly over-fished. Extinction was threatened. But, fortunately, the United States Commission of Fish and Fisheries took hold to repair the ravages.

Collecting eggs is the basis of the work. Whitefish and trout spawn in the late summer and autumn. Billions upon billions of eggs are deposited each season. Billions never become fish. Other billions do. An average trout will lay in a season 6,000 eggs;



PREPARING THE CATCH FOR MARKET

indeed, trout have been caught with 15,000, while the whitefish are more fecund still. Trout eggs average 1,000 to the pound; whitefish, 10,000. Despite destruction by other fish, many out of such large numbers must survive. The trout eggs are deposited on reefs ten to fifteen miles from shore and from ten to 150 feet below the surface, in favorable spots revisited year after year. It is here that havoc is wrought by wanton fishermen. The whitefish spawn at greater depths, and comparatively little is known of their habits.

According to the natural process, the eggs



A TYPICAL FISH-GATHERING BOAT WHICH CARRIES PASSENGERS ALSO

are laid upon a smooth bit of rock and milted. Thereafter they take their chances. Artificial methods are surer.

Penning the fish at spawning time has been tried successfully. The pens are frameworks or nets into which the fish run and from which they are taken at spawning time and stripped of their eggs. The other method is to gather the eggs at the fishing banks during actual fishing operations.

Men in the service of the Government go out with the fishing tugs in the late autumn, or in boats, and strip the ripe fish of their eggs. These men are called "spawn takers" or "strippers." They must be men of strength and courage, for there are many dangers awaiting them in the fierce storms which beat up against the coasts of these great lakes when the late autumn winds are howling. After the stripping into a shallow pan, the milt from the male fish is sprinkled over them and the



REELS FOR DRYING GILL NETS

The nets are also often boiled in a bark solution to "tan"



THE FISH HATCHERY AT DULUTH

eggs are packed in moss-protected trays for transportation to the hatcheries. Nearly two hundred thousand eggs are contained in each case of eighteen trays. The trout are hatched out in tanks or troughs, and when the young trout appear they are placed in a rearing trough, or pond, to be kept until they are "yearlings," or distributed direct from the hatching boxes. The eggs themselves may be shipped great distances, instalments having been successfully transported to Mexico, South America, Japan and Australia.

The tiny fish are put on a diet of beef liver, chopped fine, their principal food as long as they remain at the hatchery: when they are sent away to the Great Lakes they are large enough to shift for themselves.

The trout are transferred to the lakes in ten-gallon cans, two thousand tiny fish to the can. In the course of six or eight years, the fish in a single can, should they all live, should weigh from ten to twelve tons. They are returned when large enough to ship from the hatchery, to the reefs whence the eggs were taken.

The whitefish eggs must be treated differently. They demand constant motion in cold water during the whole three months of their incubation. The eggs are placed in glass jars through which is forced a stream of water. Under the natural conditions in the lake itself

but relatively few whitefish eggs are hatched; in hatcheries, as with the trout, from seventy-five to ninety-five per cent.

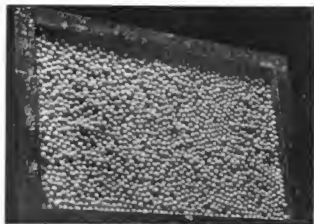
Of course, the utmost care must be exercised at the fish hatcheries to see that the small fish are kept in prime condition all through the period before they are large enough to be transferred to the lake proper. When breeding for such a lake as Superior, in which the water, summer as well as winter, is very cold, the eggs before hatching must be kept in water clear and pure, and at a temperature barely above the freezing point, during the entire period of incubation. The water must never be higher than 56° Fahrenheit, preferably from 48° to 58° for the lake trout. The temperature of the jars in which the whitefish eggs are hatched is kept at 32½°, the slightest shade above freezing. When the fish are hatched, a slight rise is allowed, so that the tiny fry pass out into water having a temperature from 33° to 34°. As soon as the whitefish eggs are hatched, the fish follow the stream of water out of the jar into a tank where the water should not be above 55°. Sixty-five degrees is fatal.

The Government maintains hatcheries, or stations, as they are called, for the propagation of fish for fresh and salt water, at thirty-seven points in many States.

During last season the Commission depos-

ited 19,000,000 trout and 326,000,000 whitefish in the Great Lakes. The average cost per million for gathering the whitefish, as shown by one of the principal hatcheries—at Put-in Bay, Ohio—was \$13.95. Allowing this figure for the entire whitefish collection would bring the cost up to \$4,500. I do not suppose any one can give any accurate estimate of the number of these healthy fish—for only the strong and healthy ones are distributed—which will survive, but should one-half of them reach a six-pound maturity, their value at low current prices will be \$100,000,000.

Lake Erie is an illustration of the practical value of the work. Several years ago it was one of the greatest whitefish reservoirs on the globe. The lake is comparatively shallow, and, in the words of the report of the



FERTILIZED LAKE TROUT EGGS
Each egg is about the size of a French pea.

Joint Commission already referred to, is practically one continuous fishing ground, accessible and more or less lucrative to the fishermen at all points. The whitefish in the beginning were sought almost exclusively. The fish were taken in nets close inshore, and mainly, if not entirely, during the spawning run. The suicidal character of this method, not to call it by a harsher term, is seen in the fact that for the ten-year period between 1885 and 1895 the whitefish catch fell away 60 per cent. In 1885 the catch was over 3,500,000 pounds; in 1893 it had fallen away 2,240,000 pounds, through over-fishing.

The catching of these fish of the Great Lakes is not effected without great hardship. No harder, braver men are found than those who follow the fisheries of these lakes.



WHITEFISH EGGS KEPT IN CONSTANT MOTION IN ICE-COLD WATER

He who steams down this magnificent chain of lakes, on a sunny summer day, when the vast spread of blue-green water is broken only by the faint plume of smoke from some passing steamer, when the air is full of a fine tonic and the noisy earth is far away and day slowly succeeds day for a thousand miles of delightful voyaging—such a man sees the smiles of the Great Lakes; he knows them only when they are on their good behavior. He who goes out on a fishing smack or tug in late November, when the air is full of marrow-penetrating cold, when the snow comes now and then in fitful, spiteful blasts, when the wind is high and the waves beat up over the little craft as it tries in vain to go to anchor near the nets and break in harsh fury on the low-lying reefs and the rocky coast, when the sky is leaden and the short day slips quickly into night—this man knows the lakes in their sterner mood.

The nets which the fishermen set are generally raised twice a week. Very much of the fishing is done with the pound-net, or, as the fishermen persist in calling it, the "pond" net. These nets have been roundly condemned. They consist first of a long



A FIFTEEN-POUND TROUT

wall of mesh running out from shore, perhaps 200 feet, extending from the surface of the water to the bottom and held by timbers driven into the bottom of the lake. This wall is called the lead or guide. The fish swim up against this wall, are checked, are deflected in their course, and then feel their way along the wall until they are led into an opening known as the heart or wing. From this they work their way along until they come to a narrow opening called the tunnel. Through this they enter into the crib or pot—and once inside there is no

mesh. In some instances as many as thirty pound-nets have been set in a single course extending from the shore in comparatively shallow water, from six to eight miles out—a continuous wall of net which is bound to gather in practically all fish swimming in the region.

Some of the nets are raised by fishermen in small sailing vessels, others by fishing tugs. When a good haul is made by one of these tugs the side of the boat will be a mass of squirming, wriggling fish, literally hundreds of them, possibly 2,000 pounds in a



A GILL NET DRYING

escape. The crib is about forty feet square and fifty feet in depth, with enclosed bottom and sides. The fyke net is somewhat similar, having wings but no lead and several tunnels instead of one. In the fyke net the crib is entirely closed and is wholly under water. The gill net, which can be used to advantage in shallower water, and which is used while fishing through the ice, being stretched below the surface and drawn out through holes, is a long single net into which the fish run their heads, and catch their gills in the

single lift. The fish are cleaned on the tug as it steams onward to another net, and then thrown into boxes of chopped ice, which hold the catch until the return to port. Here they are immediately repacked in ice and shipped out. In the case of individual fishers, they sell their catch at the dock at from three to four cents a pound, depending upon the market. In a single catch there will be a good many small trout; many from five to seven pounds; while a few may weigh ten to fifteen pounds—though trout weighing over

100 pounds have been caught. Captain Craig, the keeper of the lighthouse at Thunder Cape, on the north shore of Lake Superior, caught a lake trout in a gill net three years ago which was four feet three inches long, thirty-three inches in girth, and weighed fifty-three pounds.

When the nets are to be lifted by a fishing tug, the tug goes to anchor alongside the stakes, which appear above the net, and two or three men put off in a punt or small boat to the net. The meshes of the net are seized and drawn up into the boat, and with long-handled scoops, somewhat like landing nets for brook trout fishing, the fish are thrown up from the small boat upon the deck of the tug, which rapidly becomes a mass of live fish several feet in depth. In case the

lifting of the nets is done by sailboat, the fisherman puts out to his nets alone and with great labor raises the heavy load and pitches it into the hold of his boat. During the present season—1902—a single sailboat fisherman on the north coast of Lake Superior lifted a pound-net in which were 4,400 pounds of fish. I saw this same man lift a net, on a cold August morning, not long after sunrise, in which were 1,200 pounds of trout, whitefish and lake pike.

When the individual fisherman has cleaned his catch of fish, a tug calls for the catch, the captain weighs it as it comes on board; the fish are pitched into huge boxes of ice and carried into port, there to be quickly sent out either by rail or fast express steamers to the consumers in "the States."

ANOTHER REVOLUTIONARY INCREASE OF GOLD

HOW ACTIVITY ALL OVER THE WORLD WILL BE STIMULATED BY THE DOUBLING OF THE GOLD SUPPLY WHEN THE SOUTH AFRICAN MINES ARE DEVELOPED—THE UNITED STATES THE CHIEF GAINER—NO FEAR OF FINANCIAL DISTURBANCES—THE CERTAINTY RATHER OF ENORMOUS LEGITIMATE DEVELOPMENT

BY

CHARLES M. HARVEY

ENGLAND has the making of a new America in the Southern hemisphere," says Lord Kitchener. He, of course, has especially in mind the accessions of territory which the Boer war brought. He has in view also the enormous output of gold expected from a part of this new territory within the next few years. With the annexation of an area slightly larger than California (the Transvaal, 118,000 square miles; the Orange Free State, 48,000 square miles), England has a domain of 2,800,000 square miles on the African continent—not much smaller than the United States proper, though not all contiguous territory.

In 1898, the latest complete year before the Boer war, the Witwatersrand, or "the Rand," the Transvaal's principal mining district, produced \$60,000,000 in gold. At the rate of increase for the previous few years, maintained through the part of 1899 before the

war, the output would have been about \$90,000,000 in that year if the conflict had been averted, and more than \$100,000,000 in 1900. After mining has been fully resumed, which will probably be during the early part of 1903, the Rand's annual product, it is estimated by experts on the ground, will soon go up to \$100,000,000, and by 1905 or 1906 it will be \$125,000,000. It is estimated that that district will yield something like \$3,000,000,000 in the next quarter of a century, or before the reef already being worked is exhausted. What effect will this vast outpouring of new gold have on the world's industries, its commerce, and its social and political development?

CONSEQUENCES OF THE CALIFORNIA GOLD DISCOVERY

The California parallel here suggests itself. Between this country's birth as a nation and

the end of 1847 the aggregate gold output of the United States was \$24,000,000. It was \$889,000 in 1847. This was the condition of affairs when, on January 24, 1848, James W. Marshall made his discovery of glittering dust in the raceway of Sutter's mill, on the American fork of the Sacramento. In 1848 the gold yield of California sprang from nothing to \$10,000,000. It was \$40,000,000 in 1849, after the inrush had fairly begun. It was \$65,000,000 in 1853, the highest point ever touched by the California diggings. Then it gradually fell off, and its annual average for the past half-dozen years has been \$15,000,000. California's aggregate gold product from Marshall's discovery to the end of 1902 has been about \$1,500,000,000.

California's sudden doubling in a year of the amount of gold which the entire United States produced in the sixty years preceding Marshall's discovery had stupendous consequences. The Western verge of civilization, which had reached the Missouri in 1848, after two and a third centuries of march from Jamestown and Plymouth, sprang across to the Pacific in a single year. This swung the country's social and political centre of gravity many degrees westward; it brought California into the Union as a free State in 1850; it broke forever the balance between the slave and the free States which Southern statesmen had persistently preserved; it produced the demand for new slave territory which incited the repeal of the Missouri compromise in 1854, and this brought the conflict between the North and the South for the possession of Kansas, which split the Democratic party on sectional lines in the Charleston convention of 1860, and gave the Republicans the victory in the Presidential contest of that year which precipitated secession and civil war and overthrew slavery.

The stream of new gold at the same time quickened all sorts of trade and industry all over the country; it sent thousands of prospectors through the whole of the Cordilleran region from Mexico to the Canadian line, who struck gold in Colorado in 1858, silver in Nevada in 1859, gold in Montana in 1863, and one or the other, or both, in other localities afterward; it created new needs which it furnished the means to supply; it quintupled the mileage of the railroads in a single decade; it increased the volume of immigration from Europe; it added to the coun-

try's resources, wealth, power and confidence in itself and in its destiny among the nations; it broadened the mental horizon of our people and the circle of their interests and activities; it led to the building of a railroad across the Panama isthmus by an American company in 1850 to facilitate communication between the country's Atlantic and Pacific coasts along a line nearly parallel to that on which the inter-oceanic waterway is to be constructed; it sent Commodore Perry to open to American commerce the ports of Japan, which until then had been sealed to the world; it brought trade treaties with China, and added greatly to the prestige of the United States among the nations.

On the world at large the effect of California's gold discovery was to put up prices and wages and to give an immense stimulus to all sorts of business; to send prospectors and adventurers all over the continents and islands, resulting in the gold find in Australia by a returned California miner named Hargreaves in 1851, in British Columbia in 1858, in Nova Scotia in 1861, in many parts of Mexico, Central and South America before and after the last-named date, and in the Rand in 1868. And these finds, of course, augmented the world interest in gold hunting which led to the discoveries in the Klondike in 1896 and in Nome in 1899.

An increased output, too, has been in progress in recent years in many of the older localities, due as much to improved processes for extracting ore as to the finding of new fields. Thus the \$95,000,000 which was the world's product in 1883, and \$118,000,000 in 1890, went to \$202,000,000 in 1896, to \$307,000,000 in 1899, to \$225,000,000 in each of the years 1900 and 1901 (the falling off being due to the closing of the Transvaal's mines by the war which began in the latter part of 1899), and to \$275,000,000 for 1902.

THE APPROACHING DELUGE OF NEW GOLD

When, by 1904, the complete resumption of mining in Edward VII.'s new domain in the Transvaal, and the regular increase in the rest of the productive countries, sends the world's output up to \$400,000,000, as compared with only a little over a quarter of that amount in 1890, and to \$425,000,000 in 1905, what will be the consequence to the world's activities? Forty-five years ago the annual increase which California and Australia were

making in the world's gold stock seemed to threaten such a fall in its price, as compared with silver and the stable commodities, that Chevalier recommended to the gold standard countries to demonetize gold and substitute silver. A British writer, Maclaren, urged the establishment in England of life insurance companies on the silver standard for the protection of depositors from loss by the fall of gold. Cobden wished Parliament to pass a law making the Bank of England publish periodically a statement of the relative values of gold and silver, so that prices of commodities and the wages of labor could adjust themselves from time to time to the decline of gold. A commission of experts appointed by Louis Napoleon's government recommended demonetizing gold and prohibiting the exports of silver, which at the prevailing coinage ratio was the preferred metal, and was being shipped from the country in large amounts. A few years later (the world's gold production having heavily shrunk in the interval, and the production of silver having more than doubled in a decade, largely owing to the deluge poured out from the bonanza mines of Mackay, Fair, Flood and O'Brien on the Comstock lode in Nevada), Germany, the United States, France, Italy, Denmark, Sweden, Norway, Belgium, Spain, Greece and other countries, most of which were theoretically on the double standard, demonetized silver, absolutely or virtually, between 1871 and 1878. England went upon the gold basis in 1816.

Thus, the battle between gold and silver having been fought, and silver having lost, this particular disturbing effect of increased gold production can never assert itself again. There is no double standard anywhere to be guarded now. All the world's nations today are on the gold basis except China, Mexico, Colombia, Ecuador, Bolivia and the five little Central American republics. The large increase in gold production in recent years has been absorbed by the expansion of gold in the circulation of the United States (which has gained 55 per cent. since 1896), by the necessities of Japan, British India, and several South American republics that exchanged the silver for the gold standard, by England's demands in the South African war, and by the world's general increase in population and trade.

The \$400,000,000 gold production which

will come in 1904—and this will doubtless progressively increase for years—will, in a quarter of a century or less, double the world's present gold stock. Moreover, by the constant extension of the use of checks, drafts, bills of exchange and other cash-economizing devices, a dollar will be able to do a continually increasing amount of duty in the exchanges. But this will have a strengthening and steadying and not a disturbing effect on the world's currencies. The increase in gold already attained in the United States, supplementing the monetary act of 1900, has placed this country's currency so firmly on the gold basis that the silver issue and the international bimetalism cries have been forever hushed. Neither can ever figure again in a political campaign in the United States. The flood of gold yet to come will end all necessity for the "scramble" for that metal among the nations which until recently bothered financiers in most of the countries. It will give the silver-standard nations, urged by the necessity of the world's trade, the opportunity to tie their currencies to the gold anchorage.

For the past few years it has been known that Señor Limantour, the alert and capable Mexican Minister of Finance, has been anxious to range his country with the nations with which its commerce is chiefly carried on. China is slow to change its standard but it has recently felt, in an impressive way, the embarrassment of its financial isolation, and it will have a favorable chance to join its neighbors and patrons on the gold basis. The possible change in these two countries alone would absorb a good many hundreds of millions of the new gold. The expansion in population and commerce in all countries, and the advance in the standard of living in many of them, will have the inevitable effect of using up more of it.

Many commodities will be advanced in price. An advance, with some fluctuations, has been in progress for several years. But it will be prevented from reaching harmful proportions by the absorption of gold in the countries which will drop the silver standard, the increase in population and commerce in most of the countries, the elevation in the standard of living which prosperity will bring in many of them, and by the steady cheapening that is going on in production and transportation.

INCIDENTAL EVILS OF PREVIOUS MONETARY
EXPANSION

President Fillmore, in his message to Congress in December, 1851, in referring to the swift growth in California's gold output, said: "This large annual increase of the currency of the world must be attended with its usual results. These have been already partially disclosed in the enhancement of prices and in a rising spirit of speculation and adventure, tending to overtrading as well at home as abroad." The discoveries made in Australia about that time added largely to the gold flood in the next few years, and helped to bring the ills which Fillmore predicted. All over the world, but particularly in the United States, men were stimulated to overdo. Credits were dangerously expanded. Manufacturers made more goods than they could sell. Dealers purchased more than there was a market for. Consumers bought more than they could pay for. More lines of railroad were built, especially in the West, than the population required for many years to come. In August, 1857, the Ohio Life and Trust Company suspended, with liabilities of \$7,000,000, and a general financial crash came all over the country.

But there were monetary convulsions in the United States long before Marshall's discovery of gold created California. The panic of 1837 was more disastrous than that of 1857. Almost equally calamitous was that of 1819. The panic of 1873 came when the gold production of the United States had dropped to \$33,000,000, as compared with \$65,000,000 in 1853, and when there was a large decline in the world's output. That of 1893 came when the production of the United States and of the world was just half what it is in these days of general prosperity in 1902.

Gold expansion has a tendency to incite rash speculation, but the gold basis of the currency of the principal nations has had a steady effect. In the United States the wildest banking of 1837 and 1857 and the silver dilution of 1893 have been abolished. Neither will ever reappear. The fundamental differences between the situation in 1902, on the eve of the reopening of the South African mines, and that which existed just previous to the gold deluge from California and Australia, destroys any real parallelism between the two epochs.

The South African mines will not restrict their influence to the Transvaal or even to the British Empire. Gold flows automatically to the country where capital is organized best, where enterprise is most active, where its returns will be the greatest. It is no longer necessary, in the interest of national solvency, to capture it on the high seas, as was done some centuries ago. A large part of the gold from the Sierras in the early days went straight to Lombard Street. Victorian financiers got more gold from California in a single year between 1849 and 1860 than Drake, Hawkins and the other Elizabethan corsairs could have stolen from Philip II.'s galleons in half a century. The United States has a little of the same sort of ascendancy in the greater financial world of 1902 that Great Britain had from Bonaparte's overthrow onward till the great house of Baring Brothers went down in the Argentine cyclone of 1890, and the Bank of England was compelled to borrow \$15,000,000 from the Bank of France to stave off disaster.

THE GREAT ENTERPRISES THAT WILL BE
STIMULATED

An immediate consequence of the reopening of the Rand mines under British auspices will be that the population and the business of the Transvaal will materially expand. The Cape-to-Cairo railroad, which, when completed, will be the world's longest all-rail line, and which is designed to make a close connection with England's Asiatic Empire, will be pushed to a finish. Every square mile of British Africa territory will feel the financial awakening. The mother country herself will renew her youth. All the nations—France, Germany, Italy, Turkey, Spain and Portugal—which have colonies in Africa, especially the first three, will suddenly feel that their possessions have gained an increased value. Land-hunger will awake. The few unappropriated spots still on the earth's surface will not long remain without a master.

Germany, which has increased her population forty per cent. in the past thirty years, as compared with two per cent. for France, thirty per cent. for the United Kingdom and nearly 100 per cent. for the United States, and which has greatly surpassed all the other European countries in coal and iron production and consumption in that line (being

left far behind here, too, by the United States), will naturally be profoundly affected, industrially and politically. The aspiration for an enlarged outlet on the North Sea, an ambition which stands as a perpetual menace to the Netherlands, is already finding frequent expression from German writers and publicists.

Russia, which grew from a population of 30,000,000 in 1800 to 140,000,000 in 1900 (a much higher rate of increase than that of any other great European nation, though the growth of our population in that time, from a population of 5,000,000 to one of 76,000,000, has been at a far greater ratio), will also be moved materially. It is a more important nation, even relatively, in Nicholas II.'s day, than it was a little less than a century ago when Bonaparte proposed to Alexander I. that Russia and France should divide Turkey and its possessions between them, without regard to the feelings of the rest of Europe, and settle the Eastern question. From President Felix Faure's time to these days of President Loubet the Republic has invested \$2,000,000,000 in Nicholas II.'s dominion. This is one of the items in the bill which France has paid in the past seven years for the Russian alliance. Hundreds of millions of dollars of the new gold which the Transvaal will throw upon the world will flow into the Czar's realm. Russia's people lack inventiveness and imagination, their civilization is mediæval, and their industrial system is archaic, but their population, which, it is estimated, will rise to the colossal totals of 200,000,000 in 1940 and of 400,000,000 in the year 2,000 must necessarily be a powerful factor in the world's development.

AMERICA THE LARGEST GAINER

But it is safe to predict that the United States will be the largest gainer by the gold deluge. Here is the best field for the investment of money that the world affords. Here is centred the most varied, the most expansive and the most profitable of the world's industrial and commercial activities. Here the consolidation of capital is greatest, the organization and direction of vast enterprises the best, and the employment of improved and economical financial appliances the most extensive. Already the United States has received a larger ratio of South

Africa's new trade of 1902 than has gone to Great Britain.

The great wealth of the United States (\$94,000,000,000 in 1900) equals the combined wealth of England and France, the second and third of the nations in this particular; and in wealth and in population this country's lead is getting longer and longer.

The seat of the world's financial empire has passed to this side of the Atlantic. New York leads London in the amount of her bank clearings and stock exchange transactions. Soon the tonnage of the port of New York will be greater than London's. More and more the larger enterprises of the world are financed from the United States. The Government of England and the Government of Russia have been recent borrowers from New York. Mr. Morgan and his associates have taken the supremacy in the financial world held by the Rothschilds from Waterloo to Plevna and down to the eve of Manila. America's money changers are the men who today open and close the gates of the temple of Janus, who make declarations of war and decide when peace shall be made.

Lord Kitchener is right in saying that the new territory in Africa will be of great benefit to England. But South Africa will not be another America. It takes more than gold mines to make a United States, however prolific these may be. Absolutely and proportionately, the United States has a far larger land area capable of cultivation than England has in the whole African continent. We have a better river system. We are more favorably situated with regard to the great countries possessing the highest civilization. We have a larger range of the useful minerals—coal, iron, copper, lead, zinc, petroleum, and other products essential to the life and development of a great State, the aggregate value of the production of which in the United States in 1901 was almost \$1,100,000,000. In the form of our Government and the character and capabilities of our people our country's advantages, of course, are still more marked. Of these there is little need to speak. South Africa's coming gold output will have profound consequences—consequences that are universal; and greatly as it will benefit other nations, every sign gives promise that we shall profit more by it than any other people.

THE HUMAN SIDE OF THE LABOR UNIONS

SUSPICION THE MOOD OF EMPLOYER AND UNION—LABOR WARFARE IN MANUFACTURING—CONTRASTING A UNION TOWN WITH A NON-UNION—HOW A UNION VIEWS RESTRICTION—THE DRAMATIC STORY OF THE CIGARMAKERS

BY

M. G. CUNNIFF

(The third of a series of first-hand studies of labor problems)

OVER the coffee one night last summer a labor union leader told me stories of employers who never have trouble with the unions—among them Senator Hanna. "A union hates a typewritten letter," said he, "but it likes a man."

Then he told an incident of a street car strike in Cleveland, which was threatened just as Senator Hanna was starting for Europe. The Senator hurried to the scene.

"Invite the grievance committee to meet me at two o'clock," he directed. "At six I must start for New York."

The committee came. They were firm. Mr. Hanna's men, like those on other lines, would strike at the signal.

"Your demands?" questioned Mr. Hanna.

He was told. He thought a moment.

"They're granted," he suddenly declared.

"Now, can I embark for Europe and know that whatever happens my lines will keep running?"

"Yes," replied the committee—and their word was kept. This was the tale as the union president told it.

"I don't wonder you like such a quick surrender," remarked the city official across the table.

"It isn't that," flashed the union man. "What I liked was the conference—man to man. That's the way to settle a labor dispute. No typewritten letters there! Why, misunderstanding causes half the labor troubles that fill the daily papers."

That, after all, is the largest fact that my studies of the unions have led me to. When I turned from the building trades, where men work within sound of the cheerful banging of hammers and breathe the clean fra-

grance of brick and mortar and fresh-sawn wood, to see a little of union factory life, in shops amid the whirl of machines and the searching exhalations of dye vats, and in the homes of union men and manufacturers, I found misunderstanding the normal relation of employer and union. Its fruit was suspicion—needless suspicion. For, thinking over all I saw and heard, I fail to understand why employers, frankly telling the unions what they have explained to me, and union men, freely stating their point of view, cannot arrange a *modus vivendi*.

A case in point is this: Visiting Danbury, Connecticut, on the advice of a union legislative agent, who pointed Danbury out as a typical union town, I called on a manufacturer who bitterly condemned the Hatters' Union, though he had once belonged to it himself. Danbury, it should be explained, produces more hats than any other town in the United States, and the owners of more than half the twenty factories there have risen from the operative's bench. This manufacturer, among many incidents of union activity—pernicious, he now regards it—told me that after a recent strike in a competing Philadelphia hat factory, the union made a settlement granting a different scale of piece-work wages than was granted him on a certain grade of hat. The harm was here: on the particular grade he produced he must pay his workmen a higher minimum price per dozen hats than the Philadelphia man, who thus could sell more cheaply.

I asked a union leader to explain.

"Any employer in town," said he, "can have just the terms we made in Philadelphia. But no Danbury manufacturer wants them.

Our Danbury scale demands from seventy cents to a dollar and a quarter a dozen on certain varying grades. The Philadelphia price is now one dollar a dozen, a lump price, on all those grades. That's the arrangement we prefer. The Philadelphia man prefers it. If Danbury would rather have the other, paying less than Philadelphia on some grades and more on others, I don't see why they object to the Philadelphia bargain."

Now plainly there is a loose screw somewhere in that situation, due to distrustful relations. Variety in wage scales might play serious mischief with business, but no reason exists why union employers and the union itself should fail to understand each other about it.

So with arbitration. I heard much of an arbitration agreement the hatters of Danbury formerly had with the manufacturers—now no longer in force.

"They will not arbitrate," said a manufacturer; "they prefer to dictate."

"Why won't you arbitrate?" I asked the union leader.

"Easily answered," said he; "we once did arbitrate—by agreement."

"Yes?" I assented.

"Well, nine times out of ten we lost."

"Um-m-m," I pondered.

"One night," he went on, "I sat near the door of the conference room. The door was ajar. In the hall was a manufacturer and one of the arbitrators, and the arbitrator said 'Don't bother to stay, Mr. Blank. You needn't worry. I'll see they don't get anything!' Then he came in, while the manufacturer went home. The meeting was called to order, and I rose. 'Gentlemen,' I said, 'this conference will stop right here. You,' said I, 'pointing to the arbitrator, 'just told Mr. Blank you'd decided on this case before you heard what we had to say. We don't want any such arbitration. If these are the methods we have to meet, we'd better fight.' So we came away. Now we fight, and nine times out of ten we win! That's why we don't like arbitration, and perhaps that's why some other unions don't like it."

Here were employers accusing the union of arrogant dictation, and union men accusing employers of underhand methods. Each side was suspicious.

But these two phases of the union question merely hint at the Danbury situation—worth

dwelling on here because already the town epitomizes what certain unions show signs of drifting to, though with anchors to windward: namely, the reputed English condition of industry—though I must say here that union men are slow to admit that England's depression is due to the unions at all.

Danbury is a beautiful little Connecticut town, so cozily nestled among green hills that all its vistas are soft-lined and verdant. Quaint little tree-embowered cottages snuggle up to the hillsides, fringed with fruit trees and kitchen gardens. The main street is clean and sedate and old-fashioned; and the factories, all scattered, are tucked away one by one where they least offend the eye. To the outward sense the town is the sweet embodiment of prosperous New England homeliness. For about eight months in the year, in two seasons, the inhabitants, men and girls, make hats for the spring and fall trade; the idle months are devoted to the kitchen gardens and little farms. Savings are religiously banked away. Slums are unknown. When the legislative agent sent me to Danbury he knew its allurements. One could be glad to live there.

But industrially the town is far from pastorally calm. From bootblacks to manufacturers every craft is organized, and the stores sell union goods. The boycott is as common as trade itself. When I arrived, the seventeenth factory out of twenty was being organized by dint of a strike, and such was the diplomatic atmosphere produced that the President of the National Hatters' Union looked at me askance because he had seen me with a manufacturer's son. The very air was electrically charged with unionism—every citizen a partisan. In Danbury far more than in larger places unionism is a human drama.

I went through factories. What I saw was this: briefly, rabbit fur blown, soaked, rolled, sized, dyed, pressed, baked, ironed, curled, and finished into derby hats by workers, who labor ten hours a day—nine on Saturdays—for about eighteen dollars a week.

The two grave charges brought against the union which controls these workers—both women and men—were restriction of output and boycotting. The boycott is carried on against any Danbury hat that does not bear inside its band the label of the National Union. Word is sent to unions all over the

country to boycott unlabeled hats, and whenever a strike is on, and sometimes when an employer persists in running a "foul" or independent shop, special agents go forth to take personal charge of the boycott. The hatters reciprocate favors done by other unions by refusing to buy non-union goods themselves. This, of course, is the ordinary form of boycott carried on by the manufacturing unions. Like the sympathetic strike in the building trades, it is their effective union weapon. "The label is a godsend to us," said a union man to me with heartfelt enthusiasm. The boycott, however, is not unfamiliar. The restriction of output was different. In two months' study of the unions it was the first confessed system of definite restriction I had found tying workmen's hands, with no possible chance for "rushing."

Eight dozen a day: that is the union limit for a team of two men—"a fair day's work," the union calls it; "a lazy team's stint," say employers.

"In this very shop," said a manufacturer who had once been a union man, "finishers have sat on their benches and dangled their legs from two till four o'clock in idleness, their eight dozen finished at two o'clock, but afraid to go until four for fear the union would charge them with rushing. The extra hours they simply loafed away."

"Did they object?" I asked.

"They wouldn't dare," said he. "But that's not all. In 'foul' shops in this town are machines called side-lathes, on which the derbies spin while the finishers smooth them with sandpaper. I have a couple, too—stored—covered with cobwebs. The union says I can use them if I'll pay the hand-work piece price for the hats turned out, though the machines can double the speed of the hand work or the top-lathe they permit. At that rate we can't afford to use them. And what's queer besides, the union wouldn't let a side-lathe finisher take the double pay he'd get at the hand-work scale, though I don't know who the extra pay would go to; or else it would make him stop work at noon, when his stint of four dozen was finished. Indirectly, but conclusively, they say the side-lathe shan't be used. We're as badly off as England."

That night I met a labor leader at the union meeting room.

"Hello," said he; "what do they say of us?"

I asked him about the eight-dozen stint and the side-lathe wreathed in cobwebs.

"Eight dozen," he said, "is a fair day's work, I know, for I've worked at the bench—it's as much as two average men can do; and it's just about what will give our people steady employment while the seasons are on. You know, we don't work all the time. But let rushing begin! Men would overwork. Even now I know many a man worn out at thirty-five, with a system full of mercury from the sizing, or lungs all soggy with breathed-in bits of flying fur. The work wouldn't go round, and a smaller force would work a shorter season. Then the manufacturers would lower the piece price; a man would have to do five or six dozen a day, or with the side-lathe even more, to make three dollars. The restriction's for our good."

"It isn't sound economics," I said. "In the long run, business conditions will defeat you."

"Perhaps," he said, with full comprehension. "But when the economic law grinds away our defenses, if it can, one-fourth of our members here will be forced into idleness and poverty—at least, temporarily. It is my affair as a union man not to stand and watch the economic forces grind, but to help protect my neighbors and their families. Business may be selfishness; unionism isn't. One manufacturer is pleased if he can freeze out another; it pleases me to see —, who lives across the street, in fair prosperity. I don't want to see his children barefoot in winter, as they were in the lockout days, when the manufacturers didn't give a d—n if they starved."

I touched on the side-lathe question. Here the union man was not quite frank. He said, in face of the fact that the non-union factories use them, that the machine was of no advantage: that side-lathed hats had also to be hand-smoothed and thus were finished no faster. Among union men I talked with in the shops and about the town, opposition to the machine was put on traditional grounds: the side-lathe forced expert workmen out of work. Accordingly the union was putting on a balancing drag: if union employers were undersold by "foul" shops using the lathe, did not the "foul" shops suffer from the boycott?

Here was the crux:

"Let them stop restricting," said a manufacturer. "Let us run the side-lathe and

increase production at cheaper cost. A hat, after all, is a luxury, to be worn long or speedily thrown away as the pocket dictates. So more hats would be sold. Our export trade would grow. Export trade in staple styles would mean steady employment. The factories would run all the year. Every hatting town in the country would feel the impetus, and we'd hat the world."

I explained this typically American dream to a union man.

"Pretty!" he said, "but the difficulty's here: maybe the trade would grow, and maybe it wouldn't. There's plenty of chance for growth now, and plenty of foreign export from this very town. What they ask us is to try an experiment that will put a number of us out of work—for a time, at least. It's not our business to make experiments with the bread and butter and the homes and wives and children of our members. Even if we were sure the expanded trade would eventually come, the adjustment would be slow, and meanwhile some of us would suffer. We won't allow it. If the manufacturers will show how the change can be made without throwing us out of work, we'll consider it."

There is restriction, and the theory of restriction in a nutshell. Economic laws give place to human needs. No set of union men will volunteer to be the victims of the change; and no union will draft men to be the victims.

Regard the next unfolding of the situation. Like smoking menaces on the Danbury horizon are other hatting towns—notably Fall River, Massachusetts. Some of these towns are non-union; their factories, like the few "foul" shops in Danbury, use the side-lathe, and hire boys where the unions insist on men. Also, unlike the Danbury independent shops, they employ women at the dye vats, and at the blowers and sizers, according to the Danbury people; keep superannuated help at miserable wages; and thus cut down the pay roll to the lowest figure. Where they compete with the Danbury factories they can undersell. Slowly, say the Danbury manufacturers, these menaces are eating up the industry; just as English unions have allowed English industry to decline, the hatters' union, they say, will stupidly allow these outside shops to steal away the Danbury trade. "They will kill the goose that lays the golden egg."

"That's a good theory," said my ever-ready union man—this man is a man who thinks. "But the hard fact is that the union factories in this town are growing—selling more hats every year. We don't believe Fall River is cutting in, and let me tell you we know the middlemen as well as the employers do. We make it our business to know them."

Incontestably the Danbury manufacturers are shackled, and moreover, they are plagued with petty dictations that irritate them more than would a blunt demand for more wages. They are incensed. On the union side is the realization of a human problem that appeals very little to employers, and it is to solve this problem—how to get the highest diffused prosperity—that they shackle, and bind, and annoy. There ought to be a common understanding instead.

"We must form a trust," say manufacturers.

"We had better eliminate the employer and conduct cooperative factories," say union men.

In brief, both sides say, "Let the war go on."

Going from Danbury to non-union New Britain, for my legislative agent had suggested that I compare the towns, I found my quest in a measure in vain. There was no sound basis of accurate comparison. Conditions were different because the industries are different. An unsavory foreign quarter in New Britain had no counterpart in Danbury, for no Danbury mills hired the hundreds of immigrant Poles who labor in the colossal hardware factories of New Britain, as yet too ignorant and unskilled to make good union men.

When I found that union Danbury, out of 20,000 inhabitants, had 10,000 savings bank deposits, and non-union New Britain, out of 30,000 inhabitants, 11,500 deposits, I also found that, after all, such a fact meant little. For through the New Britain post-office last year \$500,000 was sent by recent immigrants back to their European homes. The unskilled labor in the mills there, moreover, is paid, an intelligent New Britain labor leader told me, fully as much as it is worth. So despite the difference in the towns, the foreign squalor apparent in places in New Britain as against the trig New England neatness of Danbury, the intended comparison fell through.

From what I could learn from New Britain manufacturers, the industrial order in the factories of the town is that old-fashioned order in which the employer says to the workman,

"I'll give you work at such wages. Take it or leave it." He organizes his factory as a teacher would grade a class of schoolboys. With the Americans, who do the more skilled work, are Swedes, who, in the last generation, were immigrants; in yeasty America they have risen. Taking the lower places they have left vacant are the South-of-Europe people who are the immigrants of to-day. The better skilled workers are paid, some higher than the union scale in other towns, some lower; the wages probably average just as high, but they are scaled according to the workman's ability. The foreigners are poorly paid.

When I asked New Britain labor men why the factories were so little organized, they said: "The better men do not care to organize; they probably would gain nothing if they did."

"But if the foreigners are living on an un-American plane, why not organize them?"

"We don't want 'em. They're too stupid. They couldn't understand the union idea. We're waiting for the second generation—trained in American schools."

I asked a factory superintendent what attitude his corporation bore to the unions.

"No attitude," said he. "We place a man and pay him wages according to his ability. Whether he has a union card we do not inquire. But treat with a union we will not and would not."

His is a factory whose story is the story of American business success, for its products go far afield and its profits are high. It can compete with the world. An operative of ability has opportunity to advance as far as his ability will permit; the slower will stay correspondingly far behind. The unskilled work is done by foreigners. This is the New Britain form of industry.

Danbury is already brought to the reputed English condition, but it shows a diffused prosperity. New Britain, though a strikingly American town in the one matter of inventions, yet shows the spectacle of colossal factories earning heavy profits for capital, and exporting to the ends of the earth, employing stupid foreign workers that, assimilated, will no longer work for the meager wages they now receive. It is past question which town best subserves "American industry" in the common understanding of the term. But the two-sidedness of this matter

of "American industry," the human phase of it, exhibited in Danbury, as against the purely business side, I venture to emphasize by the following story, the most dramatic I have met in my studies of the labor problem. It makes clear the union feeling on the broad question.

Two match-boxes lie on my desk, given me by officers of the Cigarmakers' International Union. The sides are of celluloid. One side reads, "Smoke no cigars that do not bear this label;" below is the union label in facsimile. The other side reads, "These cigars are not union made;" below is a list of widely advertised cigars. It is a form of boycott.

"What is the story?" I asked a label agent.

"The story," he said, "is that those cigars are made by the Trust. They are made by machines that roll them out at the rate of perhaps a thousand a day. A cigarmaker can make by hand perhaps 150."

"Would you stop the machines?" I asked.

"No," he thundered, "we can't check mechanical progress—we don't want to. *We want cigarmakers to run the machines at a living wage.* When the typesetting machine came in, the typographical union insisted that regular printers should run them at the regular wages. The machines moved printing up a notch—they didn't lower wages. But cigar-making machines are run by girls—children! And on starvation wages! That's what we want to stop."

"Like child labor in cotton mills?" I asked.

"Just!" he snapped. "Admit that a father among the unemployed, with young daughters earning from six to eight dollars a week on a cigar-making machine, under a coarse and perhaps vicious foreman—I could tell you tales—is not so pretty an American sight as a father earning eighteen dollars a week and keeping his children at school. That is what we work for—to help our children—to give them a better start, please God, than we had. Let the machines come in, by all means, but let us run them. Don't fire us, to turn our fingers skilled at cigar-rolling, and good for nothing else, to idleness or to a new trade too late—and put our children in our places."

"Is that being done?" I queried.

"Do those cigars sell?" he mocked. "Do people buy the —, and the —, and the —? Or didn't you come by one of those brilliant stores where they sell a whole pocketful of

machine-made cigars for a quarter and give you a ticket for a gold watch in the bargain?"

I ask him what he meant.

"Within the last three months," he said, "thirty new cigar stores owned by a single company have started in New York. Their lights at night make the brilliantest spot in many a block from Park Row to Harlem. They sell cigars—non-union Trust-made cigars—cheaper than any other stores in town: good cigars for six cents, ten-cent cigars for five cents, five-cent cigars seven for a quarter, cigarettes at cut prices. They give premiums, too, and are jammed with custom.

"Well," he went on, "the Trust controls them—not openly, but, you see, they sell the scab cigars for almost nothing. How long do you think it will take them to drive independent stores from business? How long before one

company will make all the cigars in the country—by machines run by children and girls; and how long before one company will sell them all? Can't you see a deadly force squeezing smaller the margin of comfort in the living of American labor?"

"Won't the consumer gain?" I asked.

"A little," he admitted, "a very, very little. You know where the gain will come. And now tell me if our struggle isn't one where the public swings against us for the bribe of an extra cigar in every purchase and a coupon for a nickel-plated match-box? The union fights a righteous battle for a higher standard of American humanity—and it fights alone."

This human matter, this vital problem of the elevation of our people as a whole, labor and capital must discuss, and not in typewritten letters ten words long.

THE MORAL SOUNDNESS OF AMERICAN LIFE

OBSERVATIONS ON THE HABITS AND THE CHARACTER OF LARGE GROUPS OF PEOPLE OF DIFFERENT CLASSES OF SOCIETY AT SUMMER AND WINTER RESORTS—ONLY THE NEW YORK "FASHIONABLES" INDULGE IN DEMORALIZING PLEASURES

BY

JULIAN RALPH

OUR fashionables of New York and Newport have kept so strictly to themselves that, until last autumn, the public was in ignorance of their modes of living. The people knew only what they had read in the newspapers, or had learned by hearsay. But during August, and then merely for a month, these heirs to many of the greatest fortunes, estates and commercial enterprises abandoned their fortress-like mansions in Newport and played their parts freely side by side with the public during the race meeting at "the Springs"—that is, at Saratoga.

It was as if the stout walls of the houses of the very rich had melted away, leaving the people free to stare into the drawing rooms and gardens, the dining halls, the card rooms, and even the precincts to which madam and her daughter retreated for an afternoon siesta over a book or beside an iced

drink. For at Saratoga the porches of the cottages rented by the fashionables were but extensions of the porches used by those who paid but six dollars a day for board, and the garden of the millionaires was also the garden of the 1,500 poorer tenants of the caravan-serai.

For nearly four weeks those who had boasted the greatest privacy became the targets of 50,000 pairs of eyes during every daylight hour. They ate with the crowd, played at what the crowd played, drove where the hackmen ruled the road, sought shelter where the crowd registered its names above and below their own. In this they closely copied their exemplars, the aristocrats of Europe, who in like manner disport themselves publicly at Ascot, at Homburg, at Monte Carlo and elsewhere. Like their European models, they posed at Saratoga as the guardians of sport, the main support of polo

and the race course. And yet the backbone of the habits of the foreign nobles was missing at Saratoga, and our rich fellow-citizens proved but vain imitators—like so many actors playing the written parts of kings and nobles. For Europe has always known a separate upper class. People there do not stop to think of the remote time when there were no nobles or will be none. And the part of the nobles is one to which they were born. The supporting of pleasure and excitement is at once their duty, their trust and their heritage. To the masses all that they do seems becoming and natural. Even when they are seen to transgress the conventions of simpler folk the people merely shrug a shoulder and say "they are different." And yet, as the years go on, these transgressions are more and more hidden behind the high walls of the aristocrats' gardens and the thick fronts of their mansions. Such disregard for the opinions of the plain people as was exhibited in public at Saratoga last August was, I venture to say, paralleled nowhere in Europe during the same season.

And here was a public with a young and tender conscience largely of Puritan manufacture, with a belief in the equality of man, and with the loud noise in its ears of a debate upon the best method of disciplining the trusts, of revising the tariff, which is the hothouse of millionairing, of settling a great strike among the producers of a prime necessity of life. And this was a public with votes—wide-reaching, deep-probing, slow but very powerful votes.

What these favorites of fortune did in Saratoga may have seemed to the onlookers very European. Certainly, they knew it was not an American way of spending a vacation. It belonged to no part of our population, our country or our history. I have described the Saratogan scenes as constituting "an orgy of gambling," and I cannot modify or better the phrase. The men gambled all day and far into the night, at stocks or poker in the morning, at the races in the afternoon, at faro in a public gambling "hell" at night. Fathers, mothers, sons and daughters "played the races" together, fathers looked at their heirs at cards in the gaming house, young wives, young boys and young ladies were taken to dine in the gambling house (in a room commanding a view of the faro and roulette tables), and occasional bets upon the roulette

wheel, while all waited to be served, were made by the men at these dinner parties to add piquancy to the evening's diversions. I do not mean further to dwell upon this extraordinary outbreak or exposure of moral disease. Suffice it that when, at last, many of our most distinguished leaders of high life left their Fifth Avenue fastnesses to take their pleasures with the people, they chose as their comrades the jockeys, the tipsters and the bookmakers of the race track and the black-legs of the gambling houses.

A stranger in America might easily have said, "This, then, is how Americans spend their summer holidays, and these are the morals of this people." Even I, who had been abroad for seven years, might possibly have imagined that we had become demoralized by prosperity and success in war and that Saratoga properly represented the American watering place of today.

But I was to learn better. I had gone to Saratoga from Vermont, and I returned to the same enchanted land to finish the summer. Of all places it was the best to see every phase and ingredient of American society taking its leisure. I have called it the Recreation State, but it is equally truly the American Tyrol. Here, as in the Tyrolean Alps, are the same rounded breast-like hills clad to their tops with soft rich cloaks of furry green. Here are similar lakes and lakelets (nearly all far more beautiful than those of Austria) lying among the green hills like great turquoises tossed upon puckered sheets of velvet. Here the white roads wind in the same errant way along the sides of these bosoms of Dame Nature and in the same way as in the Tyrol are met by wood roads and farm trails. Here are the summer hotels perched upon the shoulders of hills or set beside the edges of the dimpling lakes. The farmers take boarders and the villages are the rendezvous of strangers, so that far better than in the older Tyrol is this place to see a nation's people at play.

Here, from all points west of New England, but principally from New York and New Jersey, come thousands upon thousands of summer vacationers. To judge of my right to make them pose as typical Americans, I may indicate their grades of income and comfort by recording the fact that they are charged from ten dollars to fifty dollars a week—sums which comprehend a classification wide enough to take in the store clerk,

the traveling man, the partner in business, the teacher, the professor, the shopkeeper, the student and the suburban leader of society. There were three hotels around me, housing 400 persons at a time, 1,000 in the entire season. I knew many of these and studied all of them—at play, at rest, at meals, in their family circles and the men when apart from the women.

Proudly and delightedly I say that the American has not changed, and the life of the fashionables at "the Springs" is not to his taste or likely soon to become so. Here were the young of both sexes by the score, and beside them were the men who had made their way and retired, as well as those who were still climbing the hill to success. It was after I had stayed at a hotel a month and left it, that I heard it said, about a former fellow-boarder, that "he liked to sit up over a game of poker whenever he could make up a party." While I had been there he did not find any cronies, and so I never saw or knew a single gambling game being played by any of the thousand persons around me. The young people danced every night and rowed, fished, drove or climbed the hills every day, invariably in parties from six to twenty, excluding all possibility of evil. The men walked, fished, swam, drove, and in the evening played cards and read newspapers in the public rooms of the hotels. The card games were whist, euchre, hearts. The matrons read novels, knitted, visited one another, gave teas, went out driving, climbed the smaller hills—reveled in the joy of living without servants and the cares of their houses. Bowling was a daily amusement for some, and at one hotel baseball was often played—by regular "nines," by the boarders, even by the young ladies against the young men, in one instance.

There was not a single theme for scandal between June 1st and September 15th. In none of these hotels did the thoughtless behavior or the misconduct of any man or woman, boy or girl (except in the case of a boat-keeper—and he merely got drunk), provide gossip or arouse censure among this thousand of Americans. I was astonished to note that the only persons suspected of love-making and habituated to the least-lighted corners of the porches in the evenings were in every case the young widows. The relations of the boys and girls and of the young men and young women were invariably those

of playmates and good companions. I had reason to watch this phase of summer life very anxiously and closely, and I write with the utmost confidence and knowledge. Outdoor sports, co-education, life at large resorts, and the strong and startling growth of independence among women, have greatly developed this condition in the seven years I have been absent. Apparently only the men of the South now feel obliged to play the courtier to every lady, and only the ladies from below Mason and Dixon's line still permit the practice.

Though I chronicle a grade and degree of virtue nowhere else to be found in such broad simplicity and purity (except as the sexes meet innocently in Ireland), I saw much the same condition in Summerville, S. C., last winter, and also at Lakewood, N. J. In Vermont there was an intensification of that democracy which is the pride of most Americans. The visitors from the cities gave themselves no airs because of birth or wealth or social success, but tempered their democracy by allowing it to bring together only those who were congenial to one another—except in dancing, eating, and the arrangement of outdoor games, when all came together in equality and good-fellowship. The natives caricatured democracy and made it nauseous; in fact, they outraged it by constantly insisting upon their "rights," as if they were aristocrats at heart. This strange and repellant feature of a decadent Americanism requires an article for itself.

Both Summerville and Lakewood held wealthier persons than any I was with in Vermont. At Summerville there was no gambling with cards and no interest in the stock market. In Vermont I do not recall more than three persons who turned first to the stock quotations on getting the day's newspaper. In Lakewood the rise and fall of stocks was of extreme interest to a few—but only to a few. Lakewood was the only place at which I saw women drink, and wines and spirits served at meals, and there it was not a general custom. Thus, during eight months of this year of grace, I have seen practically every representative sort of American folks who can afford to take vacations. And the New York fashionables, with a small handful of rich Western speculators as their imitators, are the only ones who find pleasure in forbidden fields.

THE QUIET CONTROL OF A VAST ESTATE

A GLIMPSE AT THE PERSONALITY AND THE WORKING HABITS OF COL. JOHN JACOB ASTOR—THE AMERICAN FAMILY THAT HAS SHOWN A CONSERVING GENIUS IN EVERY GENERATION

BY

HENRY HARRISON LEWIS

ONE day not long ago a marine engineer received a polite letter asking him to call at the office of the Astor Estate. Mr. John Jacob Astor wished to consult him. "I'll have to go all dressed up," he said to his wife.

"I should think so," was the decisive reply. "Put on your best things or you'll look out of place."

The mechanic, painfully arrayed in unaccustomed starch, arrived at the office, which he found to be an unpretentious two-story double brick building on a side street leading from Broadway. The only indication of possible wealth were a number of massive iron bars guarding the front windows, similar to those sometimes found in front of banks or deposit vaults. On the inside were glass partitions, and counters with little brass-barred windows, and several serious-faced clerks poring over account books. One of these asked his name, and conducted him up a short flight of stairs.

The mechanic looked about him and saw a dingy, uninteresting interior with a commonplace safe. At the head of the stairs was a small room with several doors leading into various other rooms. Into one of these he was ushered. The only occupant was a tall man with an erect military bearing. The apartment was plainly furnished with a roll-top desk, several bookcases, a centre table, and three or four plainly framed pictures. A red carpet covered the floor. The only outside light came from two windows opening into a very narrow court. Out in this court nothing could be seen but a blank, white wall. Of the busy street only a few yards away there was no sign. Even the din of traffic from Broadway was faint.

The tall man was bending over a blue-

print spread out upon the table. He glanced up as the clerk said:

"Mr. Astor, this is Mr. So and So. He has an appointment with you, I believe."

Mr. Astor wished to see him about the details of an invention he was perfecting. The blue-prints revealed a comprehensive plan for a new marine steam turbine which Mr. Astor had made. The engineer listened carefully, but he scarcely could conceal his amazement at the thorough knowledge of marine mechanics exhibited by Mr. Astor. He was quick to realize that the new turbine promised to be a radical improvement over the one in common use. When he went home that afternoon his wife awaited the description of his call.

"Tell me about it," she said. "What did he look like? Was his office full of fine things?"

He shook his head.

"Then what did you see, John?"

"I saw a man," came the answer slowly, "and a mighty clever man, too. If he wasn't rich, the world would be richer. I tell you, Mary, if John Jacob Astor's hands weren't tied by so much wealth and so many social obligations, he'd make an entirely different sort of name."

Col. John Jacob Astor may be described as "traveler, author, soldier, inventor," and he has earned all these titles. He has a passionate fondness for outdoor sports, and he keenly enjoys automobiling. His palatial yacht, the well-known *Nourmahal*, is put to good use during the summer, and her owner often makes extensive cruises, but it is safe to say that very few men, even of those compelled to labor for their living, work harder. He has under his care the administration of an estate valued at almost two hundred millions

of dollars. The greater part of it is in realty. Although Colonel Astor has a staff of careful lieutenants who look after the details, many decisions are daily required of him. The extent of the Astor holdings in New York City is graphically expressed in the words of an impressive French visitor, who wrote home, apropos of American millionaires:

There is a fascination in his (John Jacob Astor's) vast wealth that lifts it beyond the commonplace riches of other American millionaires. True, it is real estate, but, *voilà!* it is not a single house, nor a score, but whole streets and avenues of houses. There are blocks and half-blocks, brick tenements and marble palaces, great vacant spaces worth fortunes, and buildings so clustered together that the sight of the blessed earth has passed forever. This man, this individual, who has only two arms and two legs and only one head, yes, and even a limit to his capacity of enjoyment, could stroll down Broadway or Fifth Avenue, and stretching his arms hither and yon, say, "Mine! mine, all mine!"

Because of his war record Colonel Astor is nearer to the people than any other man of his class. It will not soon be forgotten that at the outbreak of the war with Spain in 1898 he was one of the first to offer his services to the Government in many ways, placing his splendid yacht at the disposal of the Navy Department, and equipping, at his own expense, a battery of artillery for service in the Philippines. The equipping of the battery (which, by the way, made an enviable record) was the tribute of his wealth, but the offering of his services on the field of battle was a tribute of his manhood. Apropos of Colonel Astor's share in the attack on Santiago is the following anecdote told by one of the war correspondents in the field:

In '98, during those hot sweltering days so pregnant of import to the American troops arrayed in the jungle before Santiago and El Caney, that I saw a number of half-naked soldiers, crouching in the tall grass, begin to move restlessly, and a whisper passed from man to man down the panting line. There were bullets moving, and the air seemed full of the curious singing noises which accompany the deadly Mauser ball in its flight.

To raise one's head was to invite disaster, but above the waving tufts of green appeared one and then another until at least a score of men were gazing intently toward the little knoll on the right flank.

"That's not him," I heard a corporal mutter incredulously.

"Course it is," replied his next neighbor. "I guess I know Colonel Astor. I saw him in Tampa before we left. Say, did you hear he has given a whole battery, guns and all, to the Government for use in the Philippines?"

"He'll give his life too if he don't get off that knoll," was the grim reply. "Fancy a man with his money fighting down here, and risking fever. Humph! If I had—"

"Lie down, men!" sternly commanded an officer.

The line of heads slowly dropped from sight, but each man, before he vanished in the grass, snatched another glance at the tall erect figure in the mud-stained khaki uniform which interested them far more at that moment than did the Spanish enemy or Spanish bullets.

It was the human interest in a man whose patriotism rested heavier in the scale than vast wealth or social position or life itself.

It is interesting to pass a day in the little two-story building in Twenty-sixth Street, near Broadway, the headquarters of the Astor Estate, and watch the noiseless revolutions of its wheels of business. There is an air of repose strangely inconsistent with the large interests so quietly controlled. Colonel Astor's day's work is exacting and would be difficult to a less competent man. During the winter he visits his office five days a week, generally spending six or seven hours either there or in attendance at board meetings. Since he is a director in many of the great financial institutions, including such well-known concerns as the Western Union Telegraph Company, the Equitable Life Insurance Society, New York Life Insurance and Trust Company, (Trustee) Illinois Central Railway, Mercantile Trust Company, Title Guarantee and Trust Company, Astor National Bank, the Plaza Bank, National Park Bank, and the Delaware and Hudson Company, as well as numerous smaller corporations, it will be seen that his duties as a board member are by no means light.

His staff of lieutenants consists principally of a triumvirate acting as trustees of the Astor Estate. These three men, one of whom is a noted New York real estate operator, attend to all the details of the business under Colonel Astor's direct supervision. Assisted by a corps of minor officials they collect the rentals, see after repairs, make investments, and yearly add to the enormous wealth of the estate. In addition to the triumvirate, there is a private secretary who has supervision of Colonel Astor's personal affairs. The secretary's principal task is to attend to the large mail and to see that certain instructions received from his chief are carried out.

The daily mail of a man in John Jacob Astor's position offers a study in human nature. From sixty to seventy-five letters are received every twenty-four hours, and of this number at least one-half are begging letters pure and simple. He is a shining mark for the shafts of every person either too lazy or too strong to work honestly for his living. The requests for financial assistance are not

limited to the United States, but come from all over the world. One letter, which is kept as a curiosity, is a gem. It was dated at Stockholm, Sweden, and ran as follows:

MR. JOHN JACOB ASTOR,
Richest Man in all the World,
New York, U. S. A.

Honored Sir:—

I would like you to send me at once 30,000 thalers; a mere bagatelle to you, but a fortune to me. Send the check at once as I need the money very bad.

Y'rs to command,

In the same mail came a long letter, evidently from one unaccustomed to a pen, describing in glowing terms the recent discovery of a gold mine in Canada. The writer said that he alone knew the location, that he had had the quartz analyzed and found it to be extremely rich, and that he would let Mr. Astor in on the ground floor if he would advance the working capital. A request for an immediate advance of five thousand dollars for preliminary expenses formed the contents of the closing paragraph.

Another letter, written from an uptown address, contained a pathetic appeal for money to enable the writer to send his invalid wife to the country. The sum asked for was modest—only twenty-five dollars; but on investigation—for it was one of the appeals to which consideration was given—the address was found to be that of a saloon.

In the nature of the case very few of these letters reach Colonel Astor. If he gave them his personal attention his time would be fully occupied to the exclusion of his business. If he granted every request, even his vast wealth would not suffice. The legitimate demands upon his purse for charity are very large, and he responds to them regularly.

A student, principally of scientific subjects, from his boyhood, Colonel Astor has given much time to invention. His interest in good roads led him to construct and patent a contrivance for removing the pulverized waste material from macadam roads by means of an air blast. The invention was exhibited at the Columbian Exposition and attracted favorable comment.

His next venture, not so practicable, was a device, based on thoroughly scientific principles, to enable farmers to water their fields at will. The idea involved the removal to the upper and cooler atmosphere, through a closed conduit, of a volume of warm, moist

air, which would be condensed and precipitated as a rain.

His latest mechanical invention, which promises to be of practical utility, and which bears international patents, is his marine turbine engine, to drive vessels at high speed. It has no stationary parts other than the journals and foundation frames which carry it, the casing of the turbine revolving as well as the shaft, but in an opposite direction. It is proved that the extremely high speed required in other turbines is a disadvantage which the Astor device corrects. The speed is reduced one-half but the same power is retained at the propellers.

Colonel Astor is an ardent sportsman, too. He is intensely interested in outdoor athletics, and is a devotee of the automobile. The extensive breeding stables established by his father at "Ferncliff" he still maintains, although he now raises high-class hackneys instead of racers, as formerly. His yacht is an ocean steamer in miniature, and she is placed in commission for his use every summer. He shows his interest in yachting by presenting yearly for competition what are known as the Astor cups.

His latest innovation in athletics is the building of an extensive and costly athletic court at "Ferncliff." It is of one story, but it covers a great deal of ground. Under the one roof are a swimming pool sixty-five feet in length, two squash courts, a tennis court, a rifle range, a bowling alley, a billiard room, dressing rooms, and a number of bedrooms for guests. It is intended to hold house parties during the winter and to enjoy what are practically outdoor sports under cover.

Colonel Astor has written a novel, too, entitled "A Journey in Other Worlds," a semi-scientific work of fiction, which attracted not a little attention here and abroad.

This glimpse of the man who is now the manager of the great Astor estate shows the safe quality that has distinguished the family to a preëminent degree. It has been conspicuously rich longer than any other American family, and a great, if not the greater part, of the Astor fortune has been kept in real estate. It is essentially a real estate fortune, for it grew to its great proportions by the rise of land on Manhattan Island. The conserving genius of the family is as noteworthy as the accumulating genius that has distinguished so many Americans.



JOHN JACOB ASTOR

THE PRESIDENT ON HIS TOURS

HOW MR. ROOSEVELT MEETS AND TALKS WITH THE PEOPLE—THE CHARACTER OF THE MAN IN HIS SPEECHES—HIS EARNESTNESS AND HIS ORATORY—HIS WHOLE- SOULED ENJOYMENT OF HIS WEARING TASK

BY

LINDSAY DENISON

WHO FOR FOUR YEARS HAS ACCOMPANIED MR. ROOSEVELT ON HIS JOURNEYS

Illustrated from stereoscopic photographs copyrighted by Underwood & Underwood, New York

THE brazen clamor of "Hail to the Chief"—usually the band is more remarkable for earnest effort than for harmony—stops at the signal of the chairman's upraised hand. The chairman,

his voice nearly always shaking because he knows that the supreme moment of his life has come, casts aside the fervid oration of introduction he has prepared and shouts:

"Gentlemen! I have the honor to introduce the President of the United States!"

There is instant uproar. The band revives. The drums and the trumpets make many noises and as much as they can. Flags and hats and handkerchiefs wave above the heads of the people. The President rises and stands at the rail. The noise is doubled. He bows. It is a nod of greeting in all directions; a man might greet his familiar friends so. The noise is tripled. He raises one hand or both. Immediately there is silence in front of him. Off toward the edge of the audience the noise dies more slowly. He does not wait for it to die altogether. And so the President begins to speak.

It is easy for the reporter to fall into the way of using the phrase "ringing speech." But the President's voice always rings when he speaks. It has a peculiar timbre, especially when he is speaking in the open air, which has the effect of metallic vibration. There is no sweetness in that ring. Nor does it aid directly in making his words distinctly heard. But it is penetrating. The sound, if not the words, goes to the farthest part of the crowd. It catches the attention of each man and woman, and in time even of the small boy. After that everybody hears what the President is saying.

In running back over the memory of four years of following Mr. Roosevelt on his speaking tours, as candidate for the governorship of the State of New York, as Governor and candidate for the Vice-Presidency, and as President, it has been impossible not to remark the most striking trait of the man as a public speaker—no matter what his subject



GREETING COLONEL EDGERLEY AT CHATTANOOGA PARK



ANSWERING THE SALUTATIONS AT LOWELL, MASSACHUSETTS

or his situation. It is his intensity. He "goes at his audience hard." He is uttering today many of the identical expressions of his ideals of citizenship which he uttered in his campaign for the governorship in 1898. He says "the three cardinal, commonplace, old-fashioned virtues of common-sense, common honesty and common courage" with as much earnest, almost angry aggressiveness, now as then. He holds his left elbow loosely braced against his side and his hand out horizontally, and pounds away in the outstretched palm with a vehemence which it is hard for a stranger to his ways to believe does not proceed from a fresh discovery of the ideas. He drives his ideas home, almost roughly.

It is this earnestness, this almost desperate determination that he shall not be misunderstood; that his hearers shall be convinced that the other side of the question is untenable, and as trivial and as wicked as he believes the other side of all questions to be, that makes him a great campaigner. People come to hear him out of curiosity, because he is President, just as curiosity brought them to see him when he was fresh from the Santiago campaign and was a candidate for Governor. Now, as then, before he is done talking to them, their curiosity is satisfied; to their visual memory of the man is added the conviction that he is honest to the backbone.

Those who follow the President hear comments that seem to diverge a great deal. About two-thirds of those who leave a mass meeting giving voice to their opinions say: "He is awful ordinary looking, ain't he? But any one can see he is honest." The other third say: "How fine he looks when he says those things!" They all mean the same thing, though they express it so differently. While Theodore Roosevelt is speaking, the one evident thing is that a man is speaking to his fellow-men with a man's earnestness and a man's fearlessness. Nor is it too much to say that that impression, and the willingness and ability to back it up with deeds, are Mr. Roosevelt's political stock in trade.

The President is not a phrase-maker by profession. Sometimes, as much to his own surprise as to that of his following, he strikes a note in his public speeches which is epigrammatic—such, for instance, as in his speech in Fitchburg a few weeks ago, when he said, addressing the Civil War and Spanish War veterans before him:



HIS VOICE REACHES TO THE FARTHEST LIMITS OF THE CROWD



A DIRECT APPEAL AT RIVER POINT, R. I.



HE GOES AT HIS AUDIENCE HARD



DURING THE PRAYER AT NAHANT



FACING THE VAST AUDIENCE AT PROVIDENCE



DELIVERING HIS SPEECH ON THE TRUSTS

"Times change; weapons change; tactics change—the spirit of the American soldier does not change!"

It is easy to remember just how the President said that thing. He was leaning far out over a platform rail, making quarter-circle gestures with his extended right forearm, looking straight into the faces of the men to whom he was talking. They were following his words so closely—when the President looks toward a man as he speaks it is almost impossible for that man not to believe that the President is not addressing him and him alone—that they neither applauded nor cheered. But the multitude behind them cheered. The President's hand went up with the quick motion of one who would signal an approaching horseman to stop short.

"Wait, wait!" he cried, shaking his head. "Let me finish!"

With a laugh of sympathy for the impulsive sincerity of the man's desire to have his say out at the expense of applause, they quieted down again and listened to him. Some such incident, not always quite so marked because the President seldom says anything so much in the oratorical style, happens at almost every public meeting that he addresses.

No man who had a pride in his oratory could find it in his heart to spoil a period as the President does every time he is applauded before he has developed to the full the idea he is expressing. But the trait is thoroughly consistent with the dogged grinding drive with which Mr. Roosevelt hammers home his homilies; it adds mightily to the conviction that he is altogether sincere.

Because Theodore Roosevelt made his political beginnings in ways in which no politician had ever done things before, we heard a great many people say that he was "an able sort of man, but no politician." We hear less of that sort of talk now. But we hear even yet that he is no public speaker. In the same sense that he does not usually utter musical, balanced sentences that carry his audience along with them, oblivious to all except the speaker's voice, the President is not a great public speaker. But in that he convinces his audiences that he tells the truth as he sees the truth, and does the right as it is given to him to see the right, he is eminently successful.

When the President is speaking to a great

crowd, therefore, there is seldom any prolonged applause. The word "cheers" and "applause" in brackets in the printed reports of his speeches mean spontaneous outbursts of approval which have been checked by the desire to know what the President is going to say next. Now and then, when the interruption comes at a pause in both thought and words, he will take breath while the audience has its way. But that is not often.

Those who hear Mr. Roosevelt speak for the first time are apt to think that he has a sore throat or that his voice is exhausted. He has a way of letting his vocal control get away from him when he is making a telling point, of which he is conscious as a telling point. At such times his voice rises to something very like a falsetto. In conversation, when he is making such points much more freely than in a public speech, the same raising of the pitch of his voice is much more frequent. Yet it is not really a vocal defect. It is the speaker's unconscious signal of a good-humored crisis in his argument. It is his chuckle at a joke which the audience will laugh at when its turn comes.

It must never be forgotten by students of the President's public utterances that he is a man who must always, because of the necessary dignity of his place, keep his inborn sense of humor under control. President Roosevelt's humor is perhaps a more strongly marked characteristic in him than the humor of any President since Abraham Lincoln, though it is of an entirely different sort from Lincoln's. In his conversation every utterance bristles with altogether original expressions, rich in irony and invective. It is fair to quote an example. In speaking of a certain political opponent of great ingenuity he said recently:

"Don't speak of him as my enemy. I like him. He is interesting. It is pleasant to see how many ways he has of not doing the thing he has *not exactly* promised to do."

And again:

"Oh, I think Brother ——— is a sincere friend. But his money nerve is very sensitive. If he acts peculiarly when it twitches, we must find a way to forgive him."

A man who talks with his friends, who talks to himself, who thinks, in such a strain, must keep a firm grip on himself when he speaks in high places. We are pretty well past speaking of Theodore Roosevelt's lack of



MAKING AN EMPHATIC POINT



A CHARACTERISTICALLY QUICK THRUST



A BURST OF ELOQUENCE



A MAN-TO-MAN EXHORTATION



"HE DRIVES HIS IDEAS HOME ALMOST ROUGHLY"



AS MUCH EARNEST CONSIDERATION GIVEN A SMALL CROWD AS A LARGE ONE

self-control; we are beginning to realize that he controls far, far more than is within the comprehension of most of our public men. The break in his speaking voice means, perhaps, that he has made up his mind to let himself go—just so far.

Roughly calculating, the President has traveled about thirty thousand miles in the last four years making public speeches. He is just as eager for this sort of work today as he was at the beginning. He is more eager. In the beginning he did not know exactly what he could do. He knows now that he will have an attentive audience wherever he goes. And he enjoys himself on his public tours. It could be nothing but a joy to any man of competent physique to find the enthusiasm of the American people rising strong and clear to meet him wherever he goes. Mr. Roosevelt does not like everybody. There is a certain type of man, represented, perhaps, by one in every thousand, whom he would like very well to see wiped off the earth. But he likes most folks. He likes the average man. And after all there is no way of striking the average of the whole people of the United States quite so satisfactorily as by going out in a special train and having them all come down to the railroad station to meet you. The lazy, the indifferent, the ostentatiously cynical stay at home. But the average natural man and woman of quick emotions come to the meeting and hear and let themselves be heard.

Mr. Roosevelt has found that by standing in the presence of great gatherings of such people he gains their confidence. He knows them and they know him. The more of such mutual self-confidence that can be established, so he feels, the better for the country. For if he makes mistakes as President, the people will know that the mistakes were made in good faith, and they will rather join with him in correcting the error than devote themselves to the throwing of stones. So it is that after a day of many speeches and of the utmost physical hardship—heat and rain, and jostling crowds, and jolting rides in springless carriages—the night will find the President keen and merry and warm-hearted toward all the world: for the simple reason that all day long he has been face to face and hand to hand with real Americans. In the highest sense of the word he has felt the pulse of the people and knows that it is as healthy as his own.

At the end of such a day his voice rings more

clearly. The slap of his fist in his hand as he marks the conclusion of an argument is sharper. The sweep of his arm, brushing aside a fallacy, is more decisive and inclusive. The most unsympathetic of human beings cannot help feeling that the President likes the people even better than the people like the President.

This is true in spite of the difficulty of the ordeal which confronts the President when he is called upon to make a short speech—a speech of from three to ten minutes in length. Mr. Roosevelt's one fear is the fear of being misunderstood. This fear rises like a spectre in front of him when he tries to be very brief. The five-minutes' speech, as Mr. Harrison and McKinley used it, was a quick, genial collection of epigrams with a local application. Mr. Roosevelt would undoubtedly like to make such speeches, but the moment he starts on them he finds that he must first come to a common understanding with his audience. In getting at this understanding his time is consumed, and the train must move on. This sort of thing tears the nerves, and even Mr. Roosevelt cannot stand more than three or four days of it at a time without showing the strain.

Fortunately, however, closely crowded days do not usually follow each other continuously on speaking trips. There is always a day in every three or four when there are but one or two speeches and an opportunity for a full and exhaustive treatment of the subject in hand. It is on such days that one realizes the change that the last four years have worked in Mr. Roosevelt as a public speaker. Such a day, for instance, was that in Boston, late in August, when he spoke before an audience in Symphony Hall. All things combined to lend inspiration. The hall itself, one of the latest built of those beautiful public buildings in the construction of which Boston is leading the whole country; the audience, a gathering of people of higher average mental training than could have been gathered into a public meeting anywhere else in the country; the day, one which had begun in the intellectual and patriotic, if frosty-clear enthusiasm of Nahant and had been continued in the rougher and less calculated approval of Lynn's public square. It was the place and time for a summing up. There was no need for the preliminary step of convincing his hearers of his sincerity. The President knew that these



A JOKE IS DEAR TO HIM



NO ORATORICAL GRACE BUT GRIM STRAIGHT-FORWARDNESS



HIS WORDS COME AS OF OLD FROM BETWEEN CLENCHED TEETH



AN EARNEST DECLARATION TO THE CITIZENS
OF MAINE



AS THE TRAIN BEGINS TO MOVE IN TENNESSEE



WITH J. J. HANRAHAN AND F. W. ARNOLD OF THE
LOCOMOTIVE ENGINEERS AND FIREMEN AT
CHATTANOOGA

people had known him and had approved of him long before they ever dreamed that he would one day hold high public office. There was no need in an atmosphere so clearly sympathetic as this of an introductory clearing away of misconceptions.

With his hands behind his back most of the time, sometimes gesturing by way of setting one situation or one phase of his subject more clearly against another, Mr. Roosevelt talked to that great audience as though it were one man and that man representative of all that is best in this people. Words came without calling or choosing. The high ability of the audience to appreciate what it was receiving had its reflected effect. There was no holding back for the dullard or the ignorant. The higher the strain of thought, the loftier the ideal, the higher mounted the power of expression. The audience became tense with intellectual delight and with warmth of affection for the man who was proving himself. Time and again, in one quarter of the hall or another, the irresistible impulse to break out in cheers burst the tense strain of attention. Each time, so well was that attention concentrated on the speaker, he held it, not by throwing out his hand or by breaking off to ask for silence, but by the slightest motion of the head, the straightening of a finger. For forty minutes was the oration continued—forty minutes of uninterrupted eloquence. At its end there was no man in the place who dared to say to himself that Theodore Roosevelt was not an orator.

Yet a month later, in a little Eastern Tennessee village of two houses, a store and a watering tank, when the President cut a five-minutes' opportunity for a speech to a one-minute apology for not making a speech, merely because he wanted time to exchange pleasantries with three tow-headed youngsters who reminded him of his own brood at Oyster Bay, he was not one bit less in sympathy with his crowd than he was in Symphony Hall in Boston.

The succession of blaring discordant bands, the succession of gasping and overcome chairmen, and the succession of cheering multitudes, may seem unendingly monotonous and wearisome to the newspaper reader, but to the President, an American discovering Americans, and discovering himself to them, there is no monotony in them and no weariness.



NATURAL HISTORY FOR THE MASSES

THE WORK OF THE AMERICAN MUSEUM OF NATURAL HISTORY—HOW IT
ACTS BOTH AS INVESTIGATOR AND POPULAR TEACHER OF THE FACTS
IT POSSESSES—THE ALMOST LIMITLESS POSSIBILITIES OF ITS FUTURE

BY

FRANK M. CHAPMAN

ASSOCIATE CURATOR AT THE MUSEUM

WHEN one day a gentleman from New York was in the natural history department of the British Museum, in London, he was congratulated, to his great astonishment, by a member of the museum staff upon having in his own city the American Museum of Natural History.

"I'm looking forward," went on the Englishman, "with more pleasure than I can express to seeing your institution. In fact, I intend going to America shortly with that end in view."

Soon after reaching home the American visited the handsome building on Seventy-seventh Street which, beautiful as it is, is only a prophecy of the completed American Museum, and he says he understands now the foreigner's enthusiasm. The mass of the American public know as little of this institution and its varied and important work as

he did. The high scientific standing of the museum is acknowledged, but its popular success is not so fully realized.

On December 22, 1877, President Rutherford B. Hayes declared open to the public the first finished section of the museum. In conformance with the original plan, which even now surprises one by its scope, section after section has been added until, in 1900, one-fourth of the projected structure was finished. I shall not attempt to describe this building and its contents, or its organization, or its continuous and healthy growth, but rather to show that the sums of money spent have brought a return in educational influences.

SCIENCE AT THE MUSEUM

No matter how popular the aims of any natural history museum may be, its most important equipment is the corps of scientists



in charge. Exhibits for public instruction, where every fact presented is accepted without question, must be arranged and labeled

with scrupulous accuracy. Knowledge to this end can be gained only through original research. The educational value of a museum's collection, therefore, depends primarily on the collections which are available for study. Most of the museum's collections are the objects of original research. They are acquired through donation, purchase or, more frequently, museum expeditions under direction, often personal, of the scientific staff.

Some idea of the museum's activity in the field is given by the statement that during the year it has had exploring parties or collectors at work in Venezuela, Colombia, Costa Rica, Martinique, Cuba, Bahamas, Mexico, Texas, Colorado, Nebraska, North Carolina, Virginia, New Jersey, New York, Massachusetts, Montana, Wyoming, Dakota, California and Oregon, British Columbia, Alaska, Greenland, Siberia, Japan and China.

The results of the study of the collections thus made are often presented in the museum's scientific publications—an octavo "Bulletin" containing some four hundred pages annually and now in its sixteenth volume, and quarto "Memoirs," monographing some group or subject. Thus the results of the museum's scientific work



WEASELS IN WINTER AND SUMMER COATS

Groups illustrating haunts, habits, and seasonal adaptation in color to environment



THE MUSEUM BUILDING IN 1851



THE MAIN ENTRANCE OF THE BUILDING AT PRESENT



THE SOUTH

Eventually the building will also face east, west

become accessible to other students. These investigations are then often reflected in the public halls of the museum through the display of additional exhibits.

The use of these research collections is not restricted to the curators who have them in charge, but they are available for study by other scientists, who are always welcomed to the museum's laboratories. Indeed, speci-

mens are often loaned to investigators in other parts of the country.

Without dwelling further on the scientific side of the museum's work, it may be said, briefly, that its equipment, both as regards the members of its scientific staff and the extent of the material available for investigation, compares favorably with that of the other leading museums of the world.

The recent Congress of Americanists, held at the museum October 20-25th, illustrates one phase of the museum's cooperation with other scientific bodies. It is also the regular meeting place of several local scientific organizations, which use its collections freely. In return these societies deposit their own collections or libraries at the museum.

THE POPULAR SIDE OF THE MUSEUM'S WORK

The museum reaches the public first through its exhibition collections. These embrace mammals, including man, birds, reptiles, fishes, insects, shells, corals, and other marine invertebrates, vertebrate and invertebrate palaeontology, geology, mineralogy, and forestry. In most of these departments the



PEARY'S MUSK-OX

Secured by Lieutenant Peary on Bache Peninsula



FACADE
and north around Manhattan Square

museum's exhibits are not excelled by those of any other institution in this country. And everything possible has been done to make the exhibits of the greatest practical value to the visitor not only by showing the natural relations of the objects displayed, but by illustrating the facts for which they stand.

Professor Huxley's description of a museum as "a consultative library of objects," admirably expresses the ideal function of a museum in its relations to people who visit museums as they turn to Professor Huxley's works for information; but it does not include a museum's relations to that infinitely greater class who come simply to wander idly through its halls. A museum's exhibits must, therefore, catch the attention of the objectless visitor; they must be interesting; they must appeal to sightseers as well as to fact-seekers.

Each department meets this problem of making its collections self-explanatory in its own way, but as indicative of some of the methods employed I may describe briefly the exhibition collections of birds, with which, personally, I am more familiar.

These are four in number, and contain some 12,000 specimens: (1) A collection of the birds of the world. (2) A collection of the birds of North America. (3) A collection of the birds found within fifty miles of New York City. (4) Bird groups. No original features distinguish the first two exhibits. Both are general reference collections, but the separation of the birds of North America not only renders more easy the identification of any North American bird, but serves to illustrate the character and the composition of the American avifauna. Similarly, the collection of birds found in the vicinity of New York City makes identification easy, and shows, almost at one glance, the nature of our bird life.

The last-named collection, however, is placed under two heads: (a) systematic and (b) seasonal. The first contains all the birds which have been recorded from within a radius of fifty miles of New York City; the second contains only the birds of the month. It is placed in two cases, one of which is devoted to what is known as "Permanent Residents," or those species which are repre-



STONE'S CARIBOU
A new specimen discovered in Alaska

sented throughout the year, while in the other migratory birds are exhibited. In the month of February, therefore, this seasonal collection is composed of the ever-present "Permanent Residents," and, in the case for migratory birds, the "Winter Visitants," or species which come from the North in the fall and return to their homes in the spring.

In March we look for the coming of the first spring birds from the South, and these are duly placed in the case of migratory species under the head of "March Migrants." April and May migrants are exhibited in a similar manner, and as the "Winter Visitants" retreat northward they are removed from exhibition. This seasonal collection reflects the conditions in bird-life prevailing out-of-doors, and is an attempt, by narrowing the field of possibilities, to simplify the visitor's effort to name some local bird. He has only to search for the labeled representative of his bird among the birds of the month. Group labels and labels for each month of the year help to make this collection clear, and it is accompanied by an exhibit which explains terms used in descriptive ornithology in which are displayed a wide variety of bills, feet, wings, tails and feathers, each with its technical name. Photographs from nature of the nests and eggs of local birds, and a collection of the nests and eggs themselves, are also exhibited in this hall.

The series of bird groups, which is not equaled elsewhere, illustrates the nesting habits of the species by facsimile reproduction of the surroundings in which the nest is placed. Swamp, meadow, beach, cliff and tree-top are shown with convincing realism. These exhibits are extremely beautiful and therefore attractive, and the important facts they represent are thus brought to the attention of many whose interest would not be



TEACHERS AND PUPILS STUDYING FOSSIL MAMMALS

gained in any other way. Not only the nesting habits of birds are thus shown, but many other facts in their histories as well; for example, how the young conceal themselves, how they are fed, their growth and accompanying changes of plumage, the relation between climate and color, the changes of color with season; explaining, for instance, how the bobolink becomes the reed-bird, or the brown summer ptarmigan becomes snowy white in winter. More economic in character are the collections of building stones and the Jesup collection of North American woods, which are often consulted by architects and builders.

The museum also reaches the public through its lecture courses, given under the direction of its Department of Public Instruction, by its curators, through cooperation with the Board of Education of New York City and Columbia University. The State Department of Public Instruction is an institution in itself. At the museum its work consists mainly of the lectures to teachers delivered by Professor Bickmore Saturday mornings during the fall and spring terms. These lectures are repeated later throughout the State, and the stereopticon slides by which they are illustrated are distributed to fourteen normal schools and seventy-eight school



THE INDUSTRIES OF THE KOSKIMO INDIANS OF
VANCOUVER ISLAND
Ethnological group

superintendents. In the year 1901, 23,000 slides were thus delivered to educational centres. The lectures by curators are usually based on the museum expeditions or exhibits, and are often descriptive of the manner in which the latter were collected, telling, there-



HALF OF A GROUP REPRESENTING A SECTION OF BIRD ROCK, GULF OF ST. LAWRENCE

The group contains seventy-three birds



TERRA-COTTA FUNERAL URNS

Found at Xoxo, Southern Mexico, by a museum expedition



RED FOXES

GRAY FOX

Specimen groups from a series illustrating the mammals of the vicinity of New York in their haunts

fore, a side of their history which cannot readily be displayed. Laboratory work for nature study teachers, with the object of giving them a practical knowledge of scientific methods of identification, has been inaugurated with marked success.

To what extent does the public avail itself of these opportunities for instruction? The museum is open without charge of admission every week-day but Monday and Tuesday, on Tuesday and Saturday nights except during the summer, and on Sunday afternoon. On Mondays and Tuesdays, which are reserved for members, and students accompanied by teachers, the general public is admitted for a small entrance fee. During last year 361 teachers with 4,959 pupils visited the museum, and the total number of visitors was 461,026. The attendance at lectures given during this period was 76,021.

One must remember, of course, that the museum's exhibits are designed not only to interest but to instruct, and a better idea of their educational value is gained from the character, rather than from the extent, of the attendance—from the students or classes who, bringing their text-books and luncheons, spend the day in profitable study.

Exhibited collections and lectures however, are not the museum's only points of contact with the public. In addition to the "Bulletin" and "Memoirs" containing the results of original research on its collections, the museum publishes a "Journal" containing popular news of its work and aims, letters from expeditions in the field, notices of installation of exhibits, and dates of lectures, and each number of this "Journal" is accompanied by a supplement entitled "A Guide Leaflet." These guide leaflets are devoted to some one collection. They are very fully illustrated, and are designed not only to explain some particular collection, but also to be used in a study of the group of animals to which they relate. Their value is not restricted to their use in the museum. They may be employed in the class-room, particularly by such classes as propose to visit the museum. They are sold at cost. Bound copies are placed with the exhibits in the museum. Certain collections, in addition to the individual labels, are further explained by typewritten bound booklets, dictated by the curator in charge, which serve in place of a personal

guide. A trained guide, who is thoroughly competent to conduct individuals or classes, explain the collections, and reply to questions concerning them, is the only possible improvement on this plan. There is such a guide in one department of the museum and his work is a marked success.

The preparation of guide leaflets emphasizes the fact that the curators' duties do not end with the writing of technical papers and placing on exhibition of properly labeled specimens. The curator, in truth, becomes not alone the exponent of the collections under his charge, but of the subjects to which they relate, and much of his time is devoted to answering requests for information, made both by mail and in person. These range from questions regarding the identity of specimens to explanations of current natural phenomena, or appeals for advice as to the most desirable methods of education in the natural sciences. Not a few inquiries come from professional writers who, when the encyclopædia fails, turn to the museum for additional details. The museum thus exerts an influence on both the natural history literature which is published and that which is suppressed.

In this connection the museum's library of 58,000 scientific works should be mentioned. Designed primarily to aid the members of the faculty in their investigations, it is practically open to the public, and the museum reading-room is much frequented by students and writers.

More far-reaching and important, however, is the museum's influence on natural history art. There is hardly a prominent American animal artist who does not habitually look to the museum for assistance. Seton, Knight, Fuertes, Carter Beard, Bull, Drake, Nugent, and a score of others, have sought their models in the museum's collections. Thousands of illustrations based wholly on museum specimens illumine the pages of dictionaries, cyclopædias, natural history and other books, to say nothing of current magazines. The museum is willing at all times to aid publishers of works or articles on natural history by permitting them to photograph specimens in its collections. Indeed, it often supplies them directly with photographs, not only of the specimens, but often of the country whence they came.

Thus we have mentioned what seem to

be the most effective methods by which the museum strives to bring to the public that knowledge of the world about us which "renders life's heritage more fair," and it is believed by those who are well qualified to judge that its efforts have won a success commensurate with its opportunities.

The museum, however, is still young. It has attained only one-fourth its projected

size, and, if the desire of those in charge be considered, not one-hundredth part of its usefulness to mankind. That which the few learn by arduous toil is made the common knowledge of the many. And in its province of encouraging the few to search out new truths, and of urging the many to hear them, the museum is both scientist and teacher.

A TRANSITION IN NAVAL EFFICIENCY

THE NEW CONNECTICUT IS FIVE TIMES AS EFFECTIVE AS
THE IOWA, AND FAR SURPASSES THE BEST EUROPEAN SHIP
— OUR BATTLESHIPS NOW THE STANDARD OF EXCELLENCE

BY

JOHN R. SPEARS

IN April, 1898, as the war with Spain was beginning, a well-known scientific periodical said truthfully, "The *Iowa* has the distinction of being the first modern first-class sea-going battleship built for the United States Navy, and she is also the largest and fastest of our fleet of ships of the line." The last battleship authorized by Congress, the *Connecticut*, now in hand at the Brooklyn Navy Yard, represents the latest ideas of our naval constructors, and shows the marvelous progress made in battleship building since the war.

Take the guns. The *Iowa* carried in turrets four guns of 12-inch calibre; the *Connecticut* will also carry four. But if the *Iowa's* four were fired in a broadside they would develop a muzzle energy of only 104,000 foot tons; the four that could be supplied to the *Connecticut* today would develop at least 185,000. If the muzzle energy of those latest four guns could be applied to the *Iowa*, it would lift her more than sixteen feet, where the old guns would lift her but nine. The new guns, moreover, although they weigh seven tons more apiece than the old, can be fired more than fifty per cent. faster. In five minutes of actual battle the *Iowa* could fire two broadsides, exerting a total muzzle energy of 208,000 foot tons. The *Connecticut*

could fire more than three broadsides with a total muzzle energy of 550,000 foot tons. In the same space of time, the eight guns of the *Iowa's* 7-inch battery could pound out 320,500 foot tons; the *Connecticut's* eight, 653,000.

Added to these larger guns the *Iowa* had six of 4-inch calibre. The *Connecticut* has twelve of 7-inch calibre. The weight of the 4-inch shot was thirty-two pounds; that of the 7-inch shot is 165 pounds. The *Iowa* could exert in five minutes 165,000 foot tons; the *Connecticut* can exert 1,862,000. But this conveys no adequate idea of the relative efficiency. For the 4-inch guns could not penetrate at any range the six inches of steel armor protecting the broadside guns of modern ships, while the *Connecticut's* 7-inch guns can penetrate more than eight inches of the best armor at 3,000 yards.

But other guns than these are to be considered. At Santiago, the Spanish crews were driven from their guns and the wood-work of their ships was set on fire by the pelting storm of six-pounder projectiles fired from the American ships. It was with six-pounders, too, that Wainwright's *Gloucester* met and sunk the two big Spanish torpedo boats. The *Iowa* carried twenty of these six-pounders, each of which struck a blow of

138 foot tons. In place of these the *Connecticut* will carry twenty fourteen-pounders—3-inch rifles—each of which will strike a blow of 709 foot tons at every shot. The twenty, if fired steadily for five minutes will exert an energy amounting to 462,850 foot tons. In addition to the fourteen-pounders, the *Connecticut* carries twelve three-pounders, which would also search out the ports of an enemy's ships at any fighting range, besides eighteen one-pounders and automatic guns that throw efficient projectiles in a stream, like water from a hose.

To sum it all up, it appears that our latest battleship is in gun power not less than five times as efficient as the largest and fastest of our ships of the line that went out to meet the Spanish.

The *Connecticut* will displace about 16,500 tons of water, where the *Iowa* displaced 11,410—an increase of 5,000 tons, or nearly fifty per cent. Where the *Iowa* showed a speed of 17.1 knots, the *Connecticut* will show something above 18. Where the *Iowa* carried armor plate fifteen inches thick the *Connecticut* will carry a better quality no more than twelve inches thick. In what other department of modern industry has such a development as this been made?

It is twenty years since Congress passed the bill (Act of August 5, 1882) under which the construction of our modern navy was begun. On the day that bill became a law the navy of the United States was the world's standard of efficiency—the example to which men turned when they talked of degeneration in the fighting power of the nations. Not only were our ships in the semblance of scarecrows: we had no yards where efficient ships could be built, nor was there a shop fit for building modern guns, or even a hammer that could forge an armor plate. In view of these facts, let us compare our latest ship with the best in hand under European flags.

The *King Edward VII.* is unquestionably the most powerful European battleship. The muzzle energy of her four 12-inch turret guns in five minutes' firing would fall short of the *Connecticut's* by over 131,000 foot tons. The *Edward* will carry four guns of 9.2-inch calibre where the *Connecticut* will carry eight 8-inch guns; but broadside to broadside the *Connecticut* could drive twenty-four 250-pound projectiles through the *Edward* while the latter was returning but ten of larger (380-pound) shot. It does not seem too much to say that

the *Connecticut's* 8-inch battery is about twice as effective as the 9.2-inch battery of the *King Edward VII.*

With the next calibre the difference is still more striking. In five minutes the *Edward's* ten 6-inch guns will exert a muzzle energy of 847,000 foot tons; the *Connecticut's* 7-inch guns 1,862,000. As for smaller guns—the *Connecticut* will carry thirty-eight, the *Edward* twenty-four.

In short, the *Connecticut* will have nearly twice the striking power of the best European ship now in hand.

A comparison of armored cruisers is equally interesting. As compared with the fire of the *Brooklyn*—the best of our cruisers in the war—the new *Washington* and the new *Tennessee* can exert, each, a muzzle energy of 2,179,000 foot tons against the *Brooklyn's* 760,500. To compete with this the best European ship, the *Good Hope*, is capable of only 1,539,000 foot tons.

The latest American cruiser is a marvel. In speed and in ability to keep the sea she is the equal of anything that floats. In striking power she is not only superior to every other cruiser that has been provided for anywhere, but she is superior to any battleship now afloat. And if she be compared with the best of the European battleships now in hand, the *King Edward*, it is seen that her guns can exert a muzzle energy of 2,178,720 foot tons to the *King Edward's* 1,694,028. She will carry but eight inches of armor on her turrets where the *King Edward* will carry twelve, and six on the broadside where the *King Edward* will carry nine, but her 10-inch guns will be able to pierce fifteen inches of armor at a range of 3,000 yards, and the American idea is that "the best protection from an enemy's fire is an efficient fire of your own." Neither the *Tennessee* nor the *Washington* will ever be seen showing her screws in time of war to the crew of any battleship now in hand.

Of Lieut. Cleland Davis' electrical method of hardening armor plate, which will render it at least twenty per cent. more efficient than the Krupp; of the use of wireless telegraphy in place of flags and lamps for signaling from ship to ship; of the turbine engine, and the use of oil for fuel, nothing need be said now because these matters are not yet fully developed. But it is worth noting that where the muzzle velocity of the projectiles of our guns was but 2,000 or 2,200 feet per second

in the *Iowa's* battery, the velocity now attained is up to and above 3,000 feet, and plans are now under consideration by which that velocity is to be greatly exceeded. Thus in comparing the striking power of the *Connecticut* with that of the *Iowa* and the best of European battleships, the 12-inch gun as now built was used in the calculations. This gun is forty calibres long. But the 12-inch guns that are to be built for the *Connecticut* (plans for which are already in hand) will be forty-five calibres long. With this length more powder can be burned and space for the added powder will be provided behind the projectile. Where the muzzle velocity of the present gun is now never less than 2,800 foot seconds, it is reasonable to suppose that the guns to be built will develop a muzzle velocity of not less than 3,500 foot seconds. A corresponding increase in the force of the blow delivered will follow necessarily.

The officers of the Bureau of Ordnance also

have under consideration plans by which the muzzle velocity of the projectiles of the smaller guns will be raised to 3,800 or 4,000 foot seconds, with a corresponding increase in striking power and in margin for error in aiming. It seems certain that when this improvement has been fully carried out 10-inch guns will replace the 12-inch in the turrets of battleships. And it is worth noting that this change would permit an increase in the number of the broadside guns, if not an increase in their calibre.

In speaking of certain features of the British warships, Lord Brassey, with the American ships in his thoughts, says in his *Naval Annual* for 1902 (p. 307): "It is a great come-down to have to confess that we have lost our superiority and are distinctly dropping to the rear."

In 1882 the American Naval ships excited the scorn and derision of all the world. *To-day they are the world's standard of excellence.*

THE NEW CENTRE OF AMERICAN FINANCE

THE NEW STOCK EXCHANGE BUILDING IN NEW YORK—SOME REMARKABLE FEATURES OF ITS CONSTRUCTION—HOW BUSINESS WILL BE TRANSACTED UNDER THE NEW CONDITIONS

BY

IVY LEE

BREATHING and embodying every development of the life of this rushing, whirling, electrical age, the new home of the New York Stock Exchange has a distinct personality. In outer contour it suggests the columnar, monumental architecture of the ancient Greeks. But this exterior shelters the very essence of the strenuous energy of this twentieth century. In erecting it nothing has been spared to make this building beyond improvement for its own purposes.

This remarkable building is to be the home of the busiest organization of 1,100 members in the world. For five hours of the business day it will be a perfect whirlpool of trading. Securities aggregating more than \$100,000,000 par value will be bought and sold in a day—

\$20,000,000 an hour. A "seat" on its floor now costs about \$83,000, and the aggregate memberships of the institution are, therefore, valued at \$91,300,000. This property is untaxable and unrecorded. The "seat" is purchased of the retiring member. It is a private transaction, legally, and the Exchange officially does not recognize that a membership has a money value. A new member must be of exemplary business character or the Exchange will not admit him, no matter what he should be willing to pay.

This is the business centre of the nation, into which are poured a vast proportion of the securities of the country which are for sale. Upon this floor are showered countless millions of dollars with which investors throughout the world desire to buy stocks and bonds

of industrial corporations, railroads, etc. Through sales on this floor huge combinations may be "floated" in a day. Through purchases here great railroads may be bought in a few hours. An outsider may do all of these things through another broker, but upon every sale and every purchase the broker must collect a commission—a commission which ordinarily amounts to \$12.50 for every hundred shares. Members executing orders through other members pay only one-half this amount. That is why about half the members pay such large sums for their privilege and yet never go on the floor in person.

As an institution, the New York Stock Exchange is unique. It is not a corporation—only a voluntary association. It resents being sued for any transaction of its members. A member who brings suit against the institution terminates his connection with it. Its rules are inflexible. Its transactions are upon an absolutely cash basis. What is bought to-day must be delivered and paid for before ten o'clock to-morrow morning. If not, the member is suspended, his contracts sold out, and his membership held as security for the losses of fellow members, all before eleven o'clock. If a member has borrowed money, and the payment of the loan is demanded at ten o'clock, payment by certified check must be made before one o'clock or the member is "sold out."

There is another feature of the operations of the New York Stock Exchange, which in the eyes of many of the public is its most important phase—the gambling. One of the rules of the institution is that "no bets or offers to bet shall be made on the floor," yet this is the greatest speculative mart in all the country. A very large proportion of the trades on the Exchange are made on "margin." The customer, to secure the broker against loss, supplies say twenty per cent. of the purchase price, and the broker buys the stock, negotiates a loan with the stock as security in order to carry it, and charges the loan to the customer. If the price of the stock goes up and the customer sells, the broker deducts the commission, interest on the loan, and other charges, and the customer gets the balance. There are endless variations of gambling on the extent of these rises or falls in market prices, but it is gambling pure and simple. Such an institution as the

Stock Exchange is absolutely essential to the business of the country. Speculation is an inevitable feature of its transactions.

The spectator visiting the Exchange witnesses a most bewildering sight. Here and there are little groups of men shouting and gesticulating wildly. They throw their hands violently in the air, jump and push, and glare fiercely at one another. Then suddenly all hands come down, some of the men do a little scribbling on a pad and rush to a telephone. That means that a sale has been made. In the group there is one man representing the telegraph company. As soon as the sale is made, he rushes to the "ticker" and sends the news of the sale over the telegraph printing apparatus, which instantaneously prints it on the "tape" in thousands of offices. Private wires flash the news to Chicago, New Orleans, San Francisco, Boston and other points. A few moments later telephone wires are heard all over the place. Brokers run to them, get from a clerk a slip of paper—a commission to buy or sell—and rush to a certain place on the floor where there is a post with a guidon containing the name of some railroad or other corporation. Then there is another wild fight, all over in a moment, and the whirl goes on. This proceeds continuously throughout the five hours. The telephones are ringing, brokers are shouting—it is no wonder that nerves give out under such mad pressure. Yet through all this storm and stress the world's great advances in business and finance are being recorded.

From 1865 to 1900 the New York Stock Exchange was housed in a building on Broad street, but the structure was antiquated and inadequate. It was decided to tear that structure down and rear a home that would be both monumental architecturally and equipped with every device that mechanics, electricity or ingenuity could supply, with every resource needed to transact the security trading for the commercial centre of the world!

One of the most important desiderata was light and plenty of it. The building is no skyscraper. It is small compared with the great steel towers among which it is nestled. Its great monumental feature is a row of six huge columns on each of the two outer facades of the building. Each of the columns is five feet six inches in diameter and reaches up fifty-two feet. Instead of having a con-

siderable number of windows just inside these columns, the architect of this building has arranged to have a vast single window just behind each row of them. Nothing comparable to this has architecturally ever before been done. Each of these windows is about 112 feet wide, fifty-two feet high, and will weigh thirteen tons. The aggregate wind pressure on the exterior of each window is about seventy-five tons. To resist this enormous force and to support the great weight of the immense glass screens, eighteen-inch iron mullions were constructed. These iron columns stand in pairs directly behind the stone columns and are hung from girders overhead. To clean the windows a kind of painter's scaffolding has been provided. Shades are fastened to the vertical iron mullions, and these run right and left instead of up and down. They are operated from the Exchange floor by electric buttons. In the freezing weather of winter, such great surfaces of glass will certainly radiate a large amount of cold air into the room. At the bases of the windows, therefore, steam radiators are placed for the special purpose of heating the interior surfaces. For some distance the glass is to be made double. The space above the radiators, which will be located between the two glasses, is to guide the heat upward and circulate the air over the whole surface of the great windows.

Next to the light, the two features of the room which it is of greatest importance should be as convenient as possible are the telephones and the annunciator. The public at large little realizes how important a part the telephone plays in the work of the Stock Exchange. Before the days of the telephone, orders and commissions had to be sent to brokers by messenger. Often messages were lost or the boys were delayed. Under present circumstances, it is possible to give an order at a broker's office in Chicago, telegraph it by special private wire to an office in New York, have it telephoned from there to the broker on the floor and the commission executed within two minutes from the time it was given in Chicago. The private wire, with branch offices all over the country, and the telephone are primarily responsible for making it possible to do such an enormous amount of business on the Stock Exchange floor in a day.

At the present time, Exchange members have about 500 telephones on the floor. In

the old building they were placed everywhere that room could be found for them. In the new structure, however, the greatest attention has been paid to placing the telephones in the most convenient possible location on the floor. The instruments are to be placed against a row of parallel partitions at the New Street end of the floor. They also encircle the great piers at that end which support the ceiling and floors above. An extraordinary amount of time and ingenuity was expended in planning these telephones so that every inch of space should be saved to the main floor and so that the clerks who operate the instruments should not be in the way of the brokers on the floor. To that end it has been arranged that these clerks shall enter the Exchange by their own door. They will not come into contact with floor members except when it is necessary to the transaction of business.

Second in importance only to the telephones is the annunciator. In the old Exchange building the annunciator was a huge checkerboard contrivance stretched across one wall. There were 1,200 squares—one for each member and officer—with a number on each. When a member was wanted at the telephone, his clerk would press a button, the flap covering his number would fall, and the member would run to his telephone to get the message. It is obvious that on a floor where perhaps 1,000 men are moving about it is not easy to locate any one, so that in the expeditious discharge of business these annunciators form an essential factor. In the new building there is a most ingenious contrivance. In each of the two side walls of the room, other than those made by the windows, there is a great oblong checkerboard, of 1,200 rectangles, each nine by twelve inches in size. These rectangles are made of opaque glass and upon each of them a member's number is painted in distinct numerals. Behind each square is several incandescent electric bulbs, with bulbs of different colors. Any one of the bulbs may be operated by the member's clerk. If the member is wanted at the telephone a red light may be turned on. If he is wanted at his office immediately, a green one. If some one wants him at the entrance, a blue globe. By alternating the colors, by duplicating flashes, and by other variations, it is obvious that an almost unlimited number of messages

may be flashed to a member on the floor. In a business where seconds often count for everything it will be possible to save a vast amount of time and money through this form of annunciator. One of them is fixed on each wall to save the members from looking one way all the time. Under the old system, the eyes of many members were injured from the necessity of continually looking at a single flapping checkerboard.

The Board Room proper contains about 15,000 square feet, an increase of about sixty per cent. over the old Exchange floor. There has been an economy of every possible square inch. The chairman's rostrum has been placed in a sort of gallery, so that members may stand and do business under the rostrum. Messenger boys and telegraph offices are placed in other rooms, with instantaneous communication possible through pneumatic tubes. Very little space is given to a visitor's gallery, and visitors are not to be so welcome to the new Exchange. Cards of admission will be necessary in the future.

Throughout the building every possible convenience has been installed. There is a

comfortable "Bond Room," where the trading is in bonds only. This room is in communication with the Board Room by pneumatic tubes and telephones. There is a restaurant. Members may take meals here and have messages shot to them from the Board Room through tubes. A member may begin a meal, get such a message, hurry to the Board Room by elevator, execute his order, and be back at his meal in five minutes or less. There are smoking rooms, conference rooms, committee rooms, club rooms, barber shop, coat rooms, locker quarters, and all connected with the Board Room. The nerves of this Board Room extend to every part of the building, just as they do, for that matter, to the whole of Wall Street and to the remotest ends of the land.

If the great march of American prosperity continues, it is believed that before long seats on 'Change will sell for \$100,000 or more. Already a movement has begun toward "listing"—that is, sanctioning the sale of foreign securities on the floor. Before long international securities will be freely dealt in here as in London or Paris.

IS AMERICAN CHARACTER DECLINING?

THE OPINIONS OF SOME EMINENT MEN WHO FEAR FOR THE
FUTURE OF DEMOCRACY UNDER THE INFLUENCE OF WEALTH
AND POWER—A GROUP ALSO OF CONTRARY OPINIONS

BY

GEORGE PERRY MORRIS

WHETHER the civilization of the United States is materialistic in its main tendencies—whether it be true of the average American that "his counting-house is his temple, his desk his altar, his ledger his Bible, and his money his God"—is a fundamental question, and it is interesting to put together the conclusions of a number of representative thoughtful men on the subject:

Dr. Felix Adler, in an address before the Society of Ethical Culture in New York City, 1900, said:

The greater part of humanity does not as yet stand for light against darkness. . . . The trouble is that nine-tenths of our people are solicitous about their material prosperity but indifferent to their moral prosperity.

E. L. Godkin, late editor of *The Nation*, wrote in April 11, 1901:

One of the new things that have come into the world of late years, along with Expansion, is absorption in dinner pails and insensibility to moral shame. The loss of shame among our public men is one of the saddest features of the time. Hitherto the sense of shame has happily stepped in to restrain ambition. It has scared men from doing things to which ambition would have prompted them. But we have lost even that. As long as we have a full dinner pail we care not what happens.

Henry Watterson, editor of the *Louisville Courier-Journal*, declared, in April, 1902:

The idiosyncrasy of the century gone by was liberty. . . . The idiosyncrasy of the century that is upon us is commerce—trade and barter—in business, in politics, at the marriage festival, and up to the very altars of the Supreme Being.

Rev. John White Chadwick, in an address before the Free Religious Association, Boston, 1901, said:

Since the world began no people ever believed in wealth so much as the American people at the present time. We worship it as we do not worship God. The millionaire bulks, in our imagination, as the saint in that of mediæval times. We believe in general in the world and those things of the world which were denounced by Jesus; in the lust of the eyes and the pride of life which were denounced by His disciples. . . . We read complacently Jesus' praise of poverty, and the offense of our commercial greed is rank; it smells to heaven.

William Lloyd Garrison, in an address to Boston negroes, July, 1899, said:

It is commercialism versus self-government, party control and patronage versus the Declaration of Independence. . . . Trust the sheep with the wolves, but trust not the nation which has shown its humanity in its treatment of the Indians, the negroes and the Chinese.

Prof. Wm. James, of Harvard University, in the Gifford Lectures, Edinburgh, 1901, said:

When one sees the way in which wealth-getting enters as an ideal into the very bone and marrow of our generation, one wonders whether a revival of the belief that poverty is a worthy religious vocation may not be "the transformation of military courage" and the spiritual reform which our time stands most in need of. . . . We have grown literally afraid to be poor. We despise any one who elects to be poor in order to simplify and save his inner life. . . . The prevalent fear of poverty among the educated classes is the worst moral disease from which our civilization suffers.

Hon. J. C. Carter, at Harvard Commencement, 1900, said:

Can a calm and candid answer to this question avoid the admission that our society at the present time is under the control, abject in thought and action, of an enormous pressure of material interests and personal ambitions which disdains any appeal to what is everlastingly true and right. Things have come to be a standing menace to the high ideals of men; and these results have been reached, not by an appeal to history, or to science, or to the reason, but by the assertion that there are irresistible tendencies to which we must of necessity yield not only, but which we must urge forward and support because they are irresistible.

Bishop John L. Spalding, Peoria, Ill., said, in an address at Chicago, May, 1899:

Our capital is fast becoming the most inhuman, the most iniquitous tyrant the world has ever known. Its tyranny is a blight and curse to those who exercise it as well as to the multitude who are its victims. . . . We are hypnotized by the glare and glitter, the pomp and circumstance of wealth, and are becoming incapable of a rational view of life. We have lost taste for simple things and simple ways. . . . We are the victims of commercialism. We have caught the contagion of the insanity that the richest nations are the worthiest and most enduring. We have lost sight of the

eternal principle that riches are akin to fear and death, that by the soul only can a nation be great.

Dr. Thomas C. Hall, Professor of Ethics in Union Seminary, New York City, wrote the following poem:

GOD OR MAMMON.

Sound the loud trumpet and beat the big drum,
Jehovah is conquered, a greater has come.
The wealth of the world and the spoil of the sea,
These alone can redeem us, these alone make us free!

The pulpits proclaim it, men sound it abroad,
Our God condones all things—oppression and fraud,
The greed of the market, the pride of the priest,
If success sits enthroned and presides at the feast.

We still speak of justice, equality, love,
As blinds for the stupid, we rule from above,
Our own eyes are opened, ah, the glitter of gold,
Is alone worth the worship we gave God of old!

Our daughters' fair bodies, the souls of our sons
Are the price of a faith which no sacrifice shuns;
Yea, though millions get crushed in the mud and the mire,
To gold's bitter mastery all the strong must aspire.

The shams of religion but veil our designs,
When our deeds are most dirty, then our "charity" shines.
The press we employ, and the preachers we pay—
So none dare defy us or stand in our way.

With but few exceptions, all those quoted are men who have differed radically from their fellow countrymen on the righteousness of the wars of the United States with Spain and of Great Britain with the South African republics. Most of them are radicals rather than meliorists by temperament, or rather they began life as radicals but in their old age have become conservatives; and there is in almost every public utterance of some of them that note of pessimism which Lowell had in mind when, in 1842, chastising Wordsworth for his pessimistic judgment of his fellow men, he said:

'Tis the saddest sight to see
An Old Man faithless in Humanity.

Proximity in time or place to an alleged or real evil is not always the best condition for judging it.

The opinions just cited, it will be noted, are all by citizens of the United States. It would be easy to quote similar unfavorable opinions of the United States from journals like the London *Saturday Review* and many of the Continental newspapers, and from an occasional traveler like M. de Regnier; and, of course, by the average European we are deemed sordid to the last degree.

But it is a striking fact that, from the days

of De Tocqueville down to Prince Henry of Prussia, the more thoughtful, intelligent visitors to our shores who have studied us carefully have commented upon our strange blending of realism and idealism.

De Tocqueville said:

An American attends to his private concerns as if he were alone in the world, and the next minute he gives himself up to the common weal as if he had forgotten them. At one time he seems animated by the most selfish cupidity; at another by the most lively patriotism. (Vol. 2, p. 171.)

Now it is precisely this blending of other-selfness with self-interest, this acquisition of property for higher private or public ends, which has impressed some of the more recent visitors to this country, as the following quotations will show:

Prof. Marcus Dods, Free Church College, Glasgow, Scotland, once said:

That which strikes me most forcibly in America is the astonishing display of wealth. Don't jump to the conclusion that I hint at vulgar display. On the contrary, my very next sensation is admiration for the way in which America seems to be using its wealth, public as well as private.

Frederick Harrison, after his visit to the United States, 1901, declared:

As to the worship of the "Almighty Dollar," I neither saw it nor heard of it as we do at home. I may say the same as to the official corruption and political intrigue. . . . I received a deep impression that in America the relations of the sexes are in a state far more sound and pure than they are in the Old World. . . . Society is in the main sound and wholesome. . . . the zeal for learning, justice and humanity lies so deep in the American heart that it will in the end solve the two great problems which face the future of their citizens—the eternal struggle between capital and labor—the gulf between people of color and the people of European blood.

Professor Hoff, of the University of Berlin, at University of Chicago, 1901, declared:

What strikes me most about your country is its realism, founded as the nation is, upon an ideal. There is no more realistic country than America, and there is no more idealistic one.

Prince Henry of Prussia said, after his tour in the United States, 1902:

I found in that country not only what is called on this side of the Atlantic "a dollar-hunting nation" but a nation striving with all its energy to secure pure and ideal possessions. There prevails in the United States an intellectual and pleasant family life, and no better life can be found in this country; and where this life does not exist, every effort is being made to attain it.

M. Robert de Billy, member of a deputation from France to participate in the dedication of the Rochambeau statue, Washington, D. C., 1902, said:

America, which to the average Frenchman is only the country where rapid fortunes are made, is for the well-educated Frenchman the land of universities. I mean the land where knowledge is cultivated with a real passion for truth and an entirely unprejudiced mind.

Professor Munsterberg of Harvard University, the most brilliant of recent German scholars to take up residence among us, in his book, "American Democracy," 1901, retorts on those who say that politics with us has reached its lowest ebb and that the whole life of the land is sacrificed to commercialism:

This may be effective, but it is not true. The stronger current of the nation is at present setting in the opposite direction. The number of men who, unselfishly and with high ideals, serve the community in a thousand forms is undoubtedly increasing every day.

Of the elder generation of captains of industry living among us, few are so well known or speak with so much weight as Hon. Abram S. Hewitt, ex-Congressman and ex-Mayor of New York City, who has recently said:

Of the future of the nation I see only ultimate good. The country is running in the right and safe trend.

Edward Everett Hale always retorts on the advocate of American materialism thus:

When you hear it said that the American people loves the dollar and is not faithful to the Ideal, ask in reply: What prince or people but the American people ever gave up so large a part of the appanage for the education of the people? . . . Talk of princely liberality! Name to me the prince from the earliest Pharaoh to the autocrats of today who has ever dreamed of such munificence.

Secretary of State Hay, in his remarks at the Harvard Commencement Dinner, 1902, described the nation as

. . . moving always consciously or unconsciously along lines of beneficent achievement, whose constant ends are peace and righteousness.

Hon. Wayne MacVeagh, ex-Attorney-General of the United States, in an address at Harvard, June, 1901, an address pessimistic as a whole, admitted that

. . . the human spirit has in different ages devoted itself to varying aims and objects, and that it has been found entirely compatible with the divine order in the education of the world, and not at all disastrous to the welfare of the race, that different nations should cherish wholly different aspirations. Hence, he argued, that because this age is devoted to the making of money as its chief ambition, this need not disturb us, for it is not at all certain that any better ambition could have been found at this time for the class of men engaged in practical business. It may, indeed, well happen that their labors are laying enduring foundations for far nobler standards of comfort, of effort and of life than we are now enjoying. . . . In saying this I do not forget that Cicero declared that a general desire of gain would

ruin any wealthy and flourishing nation, but I do not forget either that Mr. Burke, a far safer guide in the philosophy of politics than Cicero, declared that the love of gain is a grand cause of prosperity to all States.

President Geo. Harris, of Amherst College, is a man given to study of practical ethical problems and of comparative history, and he sees a change for the better rather than for the worse in our estimate of wealth. In his last baccalaureate sermon, delivered last summer at the college, to Amherst students, he said:

The exaggerated estimate which in America has been set upon wealth and display is declining somewhat in favor of more correct standards. It is beginning to be seen that possession of wealth is the very cheapest distinction; that devotion to money-making marks the newness and crudeness of a country and should lead to higher accomplishments. The rich man gives largely to colleges and libraries, identifies himself with great charities, is a collector of rare books and etchings, initiates some social experiment with his workmen, finds his way to Congress, does not forget that his father was a professor or clergyman. Wealth has deference, it is true, a servile and contemptible deference, but it is not the only value that has deference, nor the value that has the greatest deference.

President Tucker, of Dartmouth College, addressing students at the Harvard Summer School of Theology this year, spoke in part as follows:

We shall have a very inadequate conception of the power which holds in the modern world if we do not allow ourselves to idealize the present situation as history has idealized like situations in the past. Work, when measured by its relation to thought, the ambition and the enthusiasm of men, holds the same relative place which the revival of learning, for example, held in its time, or the struggle for political liberty in its day. It is the absorbing, controlling, and in its highest effect the inspiring force of modern life. . . . The zest for work which has taken possession of the Western races, and which has begun to invade the East, must be understood, if at all, in the light of its own idealism. It does not mean love of toil, nor does it mean love of money. Neither the show nor the substance of wealth offer a sufficient explanation. Among the ends sought are power, control, influence. . . . The joy is in the seeking as much as in the sense of possession.

There is much cant respecting commercialism and materialism, a cant that Emerson, to go back for a moment to the work of a seer of the generation preceding our own, had in mind when he wrote, in his essay on Nominalist and Realist:

Money, which represents the prose of life, and which is hardly spoken of in parlors without an apology, is in its effects and laws as beautiful as roses. Property keeps the accounts of the world, and is always moral. The property will be found where the labor, the wisdom and the virtues have

been in nations, in classes, and (the whole lifetime considered, with the compensations) in the individual also.

Wu Ting Fang, Minister from China to the United States, in a speech before the Carnegie Institute, Pittsburgh, Pa., 1900, said:

The test of loftiness of character is to possess boundless power without abusing it. Wealth is power. Where can you find such vast accumulations of wealth in private hands as in America, with so little attendant evil felt by society? I have seen countries where the rich oppress the poor and the poor curse the rich. There money is the root of all evil. The reverse seems to be the case in America.

In all consideration of the matter with its pros and cons, so far as it relates to the United States, there are several facts that have a pertinent bearing on the question at issue to be borne in mind:

First, that historically considered, America, as President Eliot in an address to Harvard students in 1898 pointed out, has always represented increasing well-being as well as in increasing liberty for all men.

Second, that, as Senator G. F. Hoar, in an address before the Massachusetts Legislature, said:

Plain living and high thinking are doubtless the best conditions for human life. But if the living be too plain, the thinking will not be high. The soul and body will not often hunger or thirst at the same time. Mean and base surroundings without the refinements of taste, are apt to degrade alike the intellect and the moral nature.

Third, that with most Americans the acquisition of property is not for the acquisition's sake, but for the power that it gives its possessor to do large things for his country, his church, his family, himself.

Finally, so long as our diplomacy in the far East is avowedly based on the Golden Rule; so long as our treatment of our outlying possessions is based on their education for self-government; so long as our defense of the Monroe Doctrine has underlying it protection of Latin-American Republicanism against European monarchies; so long as we give so lavishly for popular education and sectarian and non-sectarian religious propaganda; so long as we deem labor honorable and recognize manhood wherever found; and so long as we continue to rear men of vast fortunes who look upon themselves as stewards, to a degree unknown to men of any other land, we need not worry overmuch if the wealth of the nation increases with leaps and bounds.

A NEW ERA IN DECORATIVE ART

THE RECENT INTERNATIONAL EXHIBITION AT TURIN DEVOTED TO THE
DECORATIVE ARTS—ODD BUILDINGS—THE EXCELLENCE OF ENGLISH
ARTISTS—THE FAR-REACHING PRACTICAL POSSIBILITIES IN DECORATION

BY

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AN exposition devoted wholly to a novel movement in art—this was the unique distinction of the recent exhibition in Turin. The movement for a new decorative art to pervade all the activities and environments of life for the first time gave an account of itself to the world in general. The Turin Exposition, therefore, marks a new era in decoration.

During the half century just past the world lacked fruitful general ideas upon distinctive and harmonious decorative art. As a result, each separate branch of decoration developed independently without regard to general effects in buildings and interiors. Even in the homes of wealth the decorations were not consistently planned: Renaissance reliefs and Japanese vases dwelt in the same apartments with Turkish rugs, Dresden china and Louis XV. furniture. Thus the dwelling house became an eclectic museum—indeed, often a curiosity shop. If the owner possessed taste he might make such a collection distinctive, like the interior so brilliantly described by Bourget in his essay on Flaubert, but oftener unity was lacking. Meanwhile, contemporary decorative art went begging; the production of ornaments and of furniture was commercialized and reduced to dead imitation, often of the worst models; or to the horrors of a cheap, machine-made "art."

With the general revival, in the last decade, of beauty for its own sake, "as a sweet solace in the melancholy of life," there has also come a movement for beautifying common objects and making them more dignified, and distinctive of our own modern ideas and civilization. Not only does this movement demand artistic judgment in purchasing, and scorn of the cheap and characterless and inartistic, but it also aims to reform production and give a wider and happier life to

individual laborers. Through correlation of the arts every laborer, instead of being a mere insentient cog in the machinery of industrialism, is again to participate in the joy of producing a thing of beauty. Each one of the various arts will thus derive inspiration from all the others and work in common with them. Inasmuch, moreover, as most of the work is to be done by hand, it does not require factory life, but may be carried on at the home of the laborer. Though factory life cannot be superseded, a revival of the handicrafts would certainly benefit the laboring population.

Though of very recent origin, the movement has already made great progress in Europe, as the exhibition at Turin clearly shows. There is no fully developed art—only beginnings. But the exhibition did give evidence of a great force seeking an outlet and of not a little actual achievement.

In the buildings of the Exposition an attempt was made to give expression to the new spirit in architecture, and it must be confessed that, though not always pleasing at first sight, the structures were decidedly original and gained upon closer acquaintance. Their main characteristic is massiveness; indeed, they often carry suggestions of the heavy stone monuments of ancient Egypt. The sky lines are hardly ever straight, but undulating, with sweeping upward curves toward the centre of the facades. Fresco is used in the exterior walls—convolutions of lines suggestive of movement and force, as well as flowers and leaves rising in thick bunches upon slender stems, or woven into graceful garlands; and sombre, and also laughing or cynical faces, gaze down from the upper walls.

The place of honor in the Exposition was given to the works of Walter Crane, and of some other decorative artists of Great Britain, placed there by the Arts and Crafts Society

of London. There was not only Walter Crane's charming painting of the Renaissance of Venus, and a great variety of water colors, but also the cartoons for the magnificent Earle window, tapestry, majolica and tile panels, bronze utensils, designs for the most varied ornaments and decorations, as well as books printed and bound with consummate workmanship. There was, however, no place in the Exposition that so fully represented the ideas of the movement for a new decorative art as the dignified and beautiful piece of tapestry, the Orchard, designed by William Morris and executed under his care. There was also a noteworthy exhibit of jewelry manufactured by the Guild of Handicrafts of London, in which the antique forms of Anglo-Saxon and Norman jewelry have been revived and modernized with great effect. The greater part of the exhibits were arranged in "atmosphere," a term here applied to the complete interior furnishings of a dwelling or apartment, suggesting that the furniture of a house should not be a mere fortuitous collection, but should be pervaded by an atmosphere distinctive of purpose or personality.

On account of a misunderstanding the French exhibit at Turin was rather meagre. The most interesting exhibit was that of the *Hôtel de l'Art Nouveau Bing*, of Paris, an establishment which acts as agent for a large number of Parisian artists, and executes plans and designs for every imaginable article of furniture or ornament, including jewelry and paintings, tapestry, carved wood and leather, stained glass, ceramic wares, and sculpture. The idea of harmony and character in style is thus carried even to personal dress and ornament. The new French style of decoration has become generally known under the name of *florale*. Here, as in many of the other exhibits, the rugs were specially interesting. The principles of the new decorative art reject the Oriental rug because it owes its origin to the need of one striking ornament in the bare tent of a nomad, and is ordinarily seen from a very slight elevation by a person seated upon it. In a European house it fails to harmonize with the other furniture; and its bright and variegated hues and small pattern, effective when close to the view, are less pleasing and appropriate when seen from a higher elevation. Therefore, instead of the geometrical ornamentation and the dazzling richness of color in the Oriental rug, the new

art makes use of a uniform base of color; designs traced in curves and flowing bands like the ornaments in wall frescoes and in wood carving.

In Belgium there has been a great awakening. Architecture itself has been transformed in the hands of such men as Hanker and Horta, the latter of whom also worked out the principle of making the decorating of a building entirely dependent upon its structure. The Belgian interiors at the Exposition showed great originality in the use of new forms and designs as well as a pleasing harmony between structural and ornamental details. Greater public interest in decorative art has been aroused in Belgium than in any other European country, and a number of societies have been formed for the advancement of new ideas in the arts and handicrafts.

Germany has generally shown herself very conservative in the adoption of new forms of art. Her artists have either drawn their inspiration from the great masters of the antique and the Renaissance or have attempted to develop the features of the indigenous Germanic styles. The new movement has, however, obtained an entry, and has already borne some notable fruits. The principal German exhibit at Turin was that of the colony of artists at Darmstadt, which has recently been started under the patronage of Ernst Louis of Hesse. Of this colony Prof. Joseph M. Olbrich is the leading spirit; it was he who designed the so-called Hessian House exhibited at Turin. The axiom of simplicity, which is one of the main tenets of the colony, is followed with greater fidelity in this house than in the most sumptuous structures erected at Darmstadt.

The exhibitions of Italy were naturally more numerous than those of any other country, but they contained very much of the commonplace and the conventional. Still there were a number of exhibits which showed an intense effort to express modern ideas. One of the most interesting exhibits was that of the *Aemilia Arts*, a coöperative association founded in Bologna in 1898, to perfect the products of the local decorative arts, to introduce sound methods and new ideas among the artisans, and to assist the latter in improving their products, in creating a harmonious art, and in disposing of the finished articles. An artistic commission of

the society prepares designs and models, which are then executed by the artisans. The society also assists young men of promise in completing their artistic education. The industries are mostly carried on at the homes of the artisans, the products being sold from the depot of the society at Bologna. The society does not make its sole aim the creation of new methods, but it also favors the reproduction of classic works. Its products embrace the entire field of decorative art—furniture, wrought iron and bronze work, ceramic ware, terra-cotta, stained glass, leather work, lace and embroideries. Although it has existed only for so short a time, the impetus it has given to household industry in the region of Bologna is remarkable, as is evidenced by the exhibit at Turin.

Although in performance much remains to be desired, the general aims of the new movement stood out quite plainly at the Exposition. There is an intense striving after originality of form, a serious effort to express the thought and feeling of modern life—its aspiration toward freedom, its naturalness and emancipation from conventionality, its democratic sympathy, the surprising sweep of newly discovered or newly applied natural forces, and finally its new and noble simplicity of ideals. A main ingredient of the movement is democratic—not only the aspiration to render art a household matter, but also the effort to bring about a more democratic industrial organization. But it still remains doubtful whether the movement will have a deep influence upon the people in general and whether it can permanently interest them. Moreover, the employment of such original and beautiful forms especially to make interiors harmonious will remain for some time a matter of great expense. A wider circle of influence can be hoped for if the efforts of such associations as *Aemilia Arts* are successful, and if, as we are beginning to do in the public schools of the United States, the taste of the people is trained from earliest youth to distinguish and to value the beautiful.

In the actual present achievement, there is much that falls short of even less elevated requirements, much that is evidently created merely to arouse attention, without any deeper thought or feeling. The symbolism employed in the forms of decoration is often obscure and unmeaning; Oriental and mytho-

logical designs of the vaguest significance, as well as forms of invertebrate life, are used without any relation to modern thought. There is a mannered predilection for archaic elements of decoration; when the human figure is introduced it is too often languid and fragile for sane art. Moreover, the new art may be criticized for a frequent disregard of comfort; the easy chair is banished, and the straight-backed narrow chairs are such as few elderly persons would find enduring. Usefulness and comfort are often overlooked when the idea of a beautiful design has captivated the artist. Often, too, the articles of furniture are so huge that they would be entirely out of place in any but a regal mansion. The limits, too, between the various arts are often disregarded; wood is twisted like wrought iron into strange and unnatural shapes, or it is given the polish of metal and the massiveness of stone.

To expect at the present time a clear, consistent, uniform style of the new movement in decorative art would be to misunderstand its purpose and scope. It is rather an ideal, an aspiration, than a style. In the practical execution of work it makes use of forms and suggestions taken from many sources; it builds upon the foundations of national traditions; it uses the enticing symbolism of the Orient, the dark runes of Norse mythology, the Egyptian pyramids and temples, the color schemes of Japanese art. It also draws much inspiration from the great works of the Middle Ages, but it avoids as much as possible the forms of the Renaissance and of classical antiquity, which have been rendered conventional through long imitation. Though distinguished from naturalism by a deep worship of beauty, its main tenet nevertheless is truth and simplicity of expression, and it strives to look fully and directly at the great stream of modern life and to express its meaning through art in all her branches. It is democratic both in calling attention to all the forms of artistic activity and also in aiming to embrace within a great artistic community all the people, both rich and poor, artisans and employers; thus it hopes to unite some of the harsh contrasts of life. Among all the great efforts and activities of mankind at the present time, this movement challenges attention on account of the scope of its aspirations and of the crying needs which its efforts are laboring to satisfy.

TRUSTS AS THEIR MAKERS VIEW THEM

THE VIEWS OF IMPORTANT TRUST LEADERS WHICH COINCIDE IN MANY CASES
WITH THE EXPRESSIONS OF PRESIDENT ROOSEVELT IN HIS SPEECHES

BY

JAMES H. BRIDGE

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IN a few years, more than one-tenth of the manufacturing establishments of the United States have gone under the control of some so-called trust. Already some 200 combinations embrace over 2,500 separate plants, representing an aggregate capital of \$3,500,000,000. They employ over 400,000 workers who annually receive \$250,000,000 in wages and their output is valued at \$2,000,000,000 a year. Fully half of these industrial aggregates have been chartered during the last five years. In every other civilized community the same economic movement is taking place. It is this mighty tendency which politicians of every party and journalists of every hue are seeking to "curb." The effort has been well compared to that of attempting to dam the Mississippi. From the outset this coöperative movement has been met by the hostility of almost every class, just as half a century ago the development of the factory system was resisted. The evils and disorders incident to a great economic change have been held so close to the public eye as to shut out all view of its beneficent aspects. Latterly, however, there has come a disposition to recognize the evolutionary and progressive character of the movement, and denunciation is gradually giving place to argument. The change is well exemplified by the cautious utterances of President Roosevelt. While Governor of the State of New York he embodied the following statesmanlike views in one of his later messages:—

"The machinery of modern business is so vast and complicated that great caution must be exercised in introducing radical changes for fear the unforeseen effects may take the shape of widespread disaster. Moreover, much that is complained about is not really the abuse so much as the inevitable development of our modern industrial life. We have moved far

away from the old simple days when each community transacted almost all its work for itself and relied upon outsiders for but a fraction of the necessities and for not a very large portion even of the luxuries of life. Very many of the anti-trust laws which have made their appearance on the statute books of recent years have been almost or absolutely ineffective because they have blinked the all-important fact that much of what they thought to do away with was incidental to modern industrial conditions, and could not be eliminated unless we were willing to turn back the wheels of modern progress by also eliminating the forces which had brought about these industrial conditions. . . . What remains for us to do, as practical men, is to look the conditions squarely in the face and not permit the emotional side of the question, which has its proper place, to blind us to the fact that there are other sides. We must set about finding out what the real abuses are, into their causes, and to what extent remedies can be applied."

Since giving expression to these views, President Roosevelt's ideas have crystalized into such definite shape as to justify him in proposing measures for remedying the defects of the new industrialism without, as he says, turning back "the wheels of modern progress by also eliminating the forces which have brought about these industrial conditions." And curiously enough the remedy suggested is precisely that which has been urged for years by the practical genius of the very men who have built up the trusts—namely, a constitutional amendment giving the Federal Government control over them.

In 1899 Mr. John D. Rockefeller, in his testimony before the United States Industrial Commission, expressed the opinion that the remedy for the most conspicuous abuse of the power conferred by combinations was

"Federal legislation under which corporations may be created and regulated, if that is possible; or in lieu thereof, State legislation as nearly uniform as possible, encouraging combinations of persons and capital for the purpose of carrying on industries, but permitting State supervision, not of a character to hamper industries, but sufficient to prevent frauds upon the public." Before the same commission Mr. John D. Archbold testified as follows:

"If you should ask me, gentlemen, what legislation can be imposed to improve the present condition, I answer that the next great and, to my mind, inevitable step of progress in the direction of our commercial development lies in the direction of national or Federal corporations. If such corporations should be made possible, under such fair restriction and provisions as should rightfully attach to them, any branch of business could be freely entered upon by all comers, and the talk of monopoly would be forever done away with. Our present system of State corporations, almost as varied in their provisions as the number of States, is vexatious alike to the business community and to the authorities of the various States. Such Federal action need not take away from these States their right to taxation or police regulation, but would make it possible for business organizations to know the general terms on which they could conduct their business in the country at large. Lack of uniformity in the laws of various States, as affecting business corporations, is one of the most vexatious features attending the business life of any great corporation today, and I suggest for your most careful consideration the thought of a Federal corporation law."

Some of President Roosevelt's recent speeches are simply an amplification of this recommendation. Mr. H. H. Rogers and Mr. E. C. T. Dodd, both of the Standard Oil Company, gave expression to similar opinions; and that these are still the views of the men who have built up the American oil industry is shown by the following statement, prepared by Mr. Dodd for use in this article:

"A corporation created by one State of our Federal Union has no rights in other States which they are bound to respect, save only the right to carry on inter-State commerce, which right is controlled solely by Congress. All other rights of so-called for-

eign corporations depend upon State comity, and the corporation may not even question the constitutionality of a law which deprives it of the right to do business in a foreign State.

"Business on a large scale is almost necessarily conducted by corporations and it cannot be limited by State lines. Corporations should, therefore, have a more substantial right to carry on business through the Union than the vague and revocable license of State comity. Such a right can only be conferred by an act of Congress under which corporations may be chartered with power to do business in all the States and Territories, subject to such restrictions as Congress may deem it wise to impose. Such a law would be availed of for incorporation if its provisions were such as reasonably to protect creditors, stockholders and the public, while not unnecessarily impeding the carrying on of legitimate business on a large scale. No such law can be enacted without amendment of the Federal Constitution. Such an amendment is, therefore, demanded not only for the better protection of the public, but also in the interest of our growing manufactures and commerce."

While calling upon Mr. John A. McCall, President of the New York Life Insurance Company, I found that Mr. McCall was at work upon an address to be delivered before the National Convention of State Insurance Officials at Columbus, Ohio, in which he advocated exactly such a Federal corporation law as that proposed by Mr. Rockefeller and Mr. Archbold, and for the same reasons. "If," said Mr. McCall, "a State chooses to exercise its full powers over foreign corporations (that is, corporations formed in other States), it need not stop short of absolute exclusion; it may consequently, so far as legal authority is concerned, impose conditions which are unreasonable and onerous, both with regard to requirements, as well as with respect to license fee and taxation. The corporation in such cases has no remedy in the courts, even if the conditions are unconscionable; it can escape injustice only by ceasing to expose itself to the jurisdiction of laws which make unjust requirements." He concludes "that an amendment to the Constitution is necessary to secure National supervision and control of insurance companies." And almost paraphrasing Mr. Rockefeller, he advises that "pending such an amendment," efforts be made "to secure uniform laws for

taxation and other purposes in order that policy holders may be protected against the crude and oftentimes destructive legislation proposed in some of the States."

The disorder, loss and inconvenience resulting to corporations from the wide differences between State laws, the unending litigation to which these give rise, and the inducements they offer to trust-baiting and blackmailing suits, were repeatedly mentioned by the industrial leaders whose views on the President's proposal were invited, as the strongest possible argument in favor of a Federal corporation law. Instances were given of States creating corporations for the purpose of doing business which is unlawful in the State that confers the charter, and even for the purpose of working in violation of the laws of the foreign State in which it operates. A systematic canvass of the men who manage the principal industrial combinations reveal with but one exception a striking unanimity of approval of President Roosevelt's proposal. The single exception is that of the Sugar Trust, which "did not care what the President thought or did."

At the same time it is generally conceded that without a Constitutional amendment a Federal corporation law is impossible, and that the difficulties in the way of a Constitutional amendment are so great that years must elapse before the proposed remedy—or relief, as the State-badgered trusts regard it—will be available. Judge Gary, of the United States Steel Corporation, even thinks it impossible. "From the standpoint of our corporation," he says, "I see no objection to an amendment to the Constitution which shall permit an act of Congress providing for Federal inspection; but it is doubtful at least if this is a practical question. If such an amendment is proposed it will probably be opposed by substantially all the Democrats and a large percentage of Republicans. Few, if any, of the States will be willing to give to the Federal Government control of questions which are now reserved to the States. Moreover," he adds, "I believe the laws now in force are amply sufficient to protect stockholders, and consumers or users of the products of corporations, against wrong or injury. In my opinion, the greatest danger to be feared is that, as a result of hasty consideration or improper motives, there will be enactments or prosecutions calculated to

do very much greater harm ultimately to the masses than the good which, ostensibly at least, is sought."

A kindred fear is expressed by another industrial leader, who has happily joined sociological research to the practical experience of a long business career. "The danger is," says this gentleman, "that political and journalistic rivalries, sensational editorials and lying cartoons will, in a country with universal suffrage, influence public sentiment until it crystallizes into unjust and confiscatory laws which will hamper industry and injure alike the interest of labor and of capital." At the same time this gentleman says: "President Roosevelt's idea of an amendment to the Constitution, giving National control of great National forces, is a good one if practicable. It would bring order out of the political and industrial chaos which, so far as State laws are concerned, prevails in the United States. They are like the old practice in shipping goods before the days of fast freight lines—marking them in care of a 'transfer agent' at the State line, and actually rehandling the goods at every 'transfer point.'"

Concerning the President's advocacy of publicity as a remedy for certain corporate abuses, there is considerable diversity of opinion among the men who would be most affected by it. One of the best-known "captains of industry" points out that publicity is already obtained by the periodical examination, under oath, of corporation managers by the various industrial commissioners appointed by State and Federal governments. Another produces a copy of *Moody's Manual* and reads out the balance sheet of the great corporation of which he is president. "Can any one desire greater publicity than this?" he asks. Still another draws attention to the injury which he would sustain by the publication of facts which would reveal his business secrets—sources of supply of raw material, methods of manufacture, names of customers, etc. Even a statement of profits may be prejudicial to some corporations; and these will resist the passing of any very drastic measure.

Judge Gary, however, says:

"There should be no objection to publicity concerning the business of corporations. I have always strongly advocated this doctrine. The United States Steel Corporation

has been frequently complimented by the press because of the public statements which are regularly made and published."

The strongest opposition is made to the President's proposal of government supervision of corporations, which is involved in his demand for enforced publicity. "Shall an inspector be sent into every industrial establishment," asks one manufacturer "to see that its accounts are properly kept and all transactions in order as he may construe it? If so, it will be gravely resented. What is possible in the case of banking institutions, where only one commodity is dealt in, where transactions are simple and easily traced, where methods remain unchanged from year to year and experts are common, is utterly impossible in a manufacturing establishment. There processes change from day to day; new methods are constantly being adopted; and the expert of last year is a mere tyro today—so swift is the movement. Moreover, it is government interference with private affairs. The mere magnitude of the corporation does not change this fact, nor rob the espionage to which it may be subjected of its vexatious features and still more intolerable possibilities."

On the other hand, some corporations have nothing to conceal, and frankly avow their readiness to throw open their books and their business to any government inspection sanctioned by law. The more general feeling, however, is that anything like close supervision will prove impracticable, and that publicity will be incomplete, especially in the cases where it is most needed.

There is one aspect of this subject which is deserving of emphasis, and that is the tendency everywhere visible among what are called trust magnates toward a more elevated moral plane. The evils and abuses of corporate power are being remedied by the demands of the higher industrial life which we are reaching. The position of the man who directs an army of workers and controls the collected savings of thousands of his fellow-men—and women—is so lofty that

even if his natural inclination were to dishonesty, he is too conspicuous to indulge it. A sensational rumor that such an industrial leader has been seen at a roulette table is cabled to the ends of the earth and brings an avalanche of protest from investors. The kings of finance and the lords of industry live in as fierce a light as that which beat on Tranby Croft. Moreover, they are subject to the sleepless scrutiny of each other. In no place is commercial integrity valued more than in the purlieus of Wall Street; and there is rarely room on the directorate of any great corporation for one whose record is not clean. The grosser forms of dishonesty are fast being eliminated from American commercial life; and although stock-jobbing presidents and directors are not extinct, they are ever growing less numerous. Mr. James B. Dill, the great legal authority on trusts, says that at a recent directors' meeting of one of these great corporations, a resolution was passed "that it was the consensus of opinion that no director or officer of the company should avail himself of this advance knowledge (of the increased value of the company's property) to purchase any of the stock of the company on the market, before the statement was made to the public." And in further illustration of the higher conception of the duty of directors now becoming general, he quotes the following statement from the recent report of one of the large corporations, published and signed by the executive officer:

"The total number of stockholders of the company, immediately after its organization, was about 1,300. The total now is 5,153, of which 1,860 are women. Trustees as we are for this large and constantly increasing body of stockholders, many of them women, some of them the widows and children of former associates, all of them entitled to the best service we can give them, we must and do feel that the administration of this great property is a trust of the highest and most sacred character, and while it is in our charge we shall ever strive to administer it in this spirit."

AN AMERICAN BUILDER IN ENGLAND

THE WORK OF MR. JAMES C. STEWART WHICH HAS BROUGHT NEW RESULTS WITH BRITISH LABOR—THE ENGLISH LABORING MAN CAN BE TRAINED TO SPEED IF HE IS MANAGED PROPERLY

BY

AN ENGLISH CORRESPONDENT OF "THE WORLD'S WORK"

THE experiences and achievements of Mr. James C. Stewart as a supervising engineer and general manager of large construction undertakings in England—short as his career in England has been—are so notable that they may profitably be recounted in detail in pages where efficiency is an ideal.

It has been often a subject for comment that building and engineering operations in England should consume so much time and cost so much more money than in the United States. When the capital of Americans came to be invested in British construction, this difference in methods attracted their attention. One of the latest and largest building enterprises in England in which American capital is concerned is the plant of the British Westinghouse Company at Trafford Park, near Manchester. After buying 130 acres of land located upon the Ship Canal, this company planned to erect buildings covering sixty-four acres; large office buildings, iron and steel foundries, shops for foundry supplies, pattern and storage shops, girder yards, box factories, drying and dipping rooms, engine rooms, boiler rooms, and many smaller offices and workmen's dwellings. The larger houses were all to be of the steel construction so much used in America, but so little seen here. Such structures are wholly built of great steel uprights and girders, the walls being afterward filled in with bricks and terra-cotta. Also, every known manner of labor-saving device was to be employed, such as the automatic riveter for joining girders together, which strikes 1,500 blows per minute, as against 200 usually struck by hand. Bricklayers were not to be served by old-fashioned hodcarriers, but by barrow-hoists which would raise 20,000 bricks each per hour, besides loads of mortar. In spite of all these appliances, the estimate of the English contractors to whom the work was given was that, following ordinary methods of

construction, it would take five years to complete. Upon this estimate they began work, and for several months were engaged in laying foundations.

It then occurred to the American directors of the British Westinghouse Company that there was no reason why an experiment in American building should not be made, for if it succeeded and the plant was consequently ready even two years earlier than expected, they would be in an advantageous position as regarded their shareholders, to whom excuses for the delay in starting the work had already been necessary. Therefore they asked a member of the firm of James Stewart & Co., of New York, Pittsburg and St. Louis, to come over and see what could be done in the way of "hustling" with British labor. This firm is well known in America for the size of its undertakings and the speed with which it has accomplished them.

Such was the reputation which caused the British Westinghouse Company to appeal to Mr. Stewart to help them out at Trafford Park. The record which he has made for himself there has now filled his hands with work in all parts of England, until it looks as if he will not be permitted to return home. It should be clearly understood, however, that in none of the many enterprises with which he is associated here is he a contractor as he is in America. He is engaged as a consulting and supervising engineer upon work for the most part already in the hands of British contractors. In other words, he is a Yankee "hustler," engaged to stir up the easy-going British contractor, as well as the British laborer. He arrived at Trafford Park in April, 1901, with seven young Americans to assist him. He found 236 men at work. Within a week he had under him 2,600 British workmen. At times they had as many as 3,758 men under them. They also used British material wherever possible, 15,000 tons of steel at \$90 per

ton being obtained from Middlesbrough. The timber—more than 9,000,000 feet—came from America.

At this date it must be understood that from 450 to 600 bricks per day, according to the character of the work, was looked upon as the usual nine-hour day's work of the British bricklayer, while in America the same artisan lays an average of 2,000 bricks and has done as much as 2,700. Mr. Stewart rightly concluded that here was to be found one of the principal causes of delay, and he set out firmly to see what could be done to encourage the British workman to speed. Every known method was tried. One day there would be a posse of twenty special policemen on the ground ready for emergencies. The next would see the manager presenting a ten guinea suit of clothes to a foreman for an expeditious achievement. In the very beginning was instituted a system of daily progress reports from each of the seventy-five foremen or sub-foremen. The walls of Mr. Stewart's office were lined with row after row of these files. They showed the quantity of material received, the amount used, hours on the job, number of men engaged, average amount of work done per man, causes of delay, and material needed for the next day's work. These reports came in daily, and they showed at once how the work proceeded. Also there came a special report each morning from the firm's representative at the various steel foundries, announcing the daily output, tons tested and despatched, and so forth. Consequently the supply always kept pace with the demand, while the grounds around the buildings were not blocked with material waiting to be used. The first two weeks, while this organization was being built up, showed that a great deal too much money was being spent for the work done. But by this time they had, as far as bricklaying was concerned, reached 900 bricks per day per man, and by a constant process of elimination this was raised to the amazing (in England) figure of 1,800 per nine-hour day per man, with 2,500 per day per man on the plainest work.

Of course, such work brought trouble from the trades unions, of which the most progressive were startled at such overturning of rules for the employment of the less capable many instead of the more capable few. But Mr. Stewart was always ready to meet the

delegates and confer with them. He defined his position very plainly. He was willing to work with union men, and in every way according to union rules. To the bricklayers, for instance, he gave elevenpence per hour, instead of the tenpence for which the Union stipulated, but he made it as clear as possible that he was going to have the bricks laid, that he intended to be the master of his own works, that the delegates were not going to "boss" the business, that the slowest man was not to set the pace, and that each man would have to do his utmost under men who would see that the work was carried out. The alternative was that the unions would be disregarded entirely and other men employed to do the work. Ultimately an excellent understanding was reached, which existed to the last.

Early in the operations there was some trouble with the joiners. The manager asked that the men should curtail their time at noon to half an hour, and stop half an hour earlier in the evening instead. This was so directly opposed to the union rule for the noonday pipe that the men refused, and quitted work by way of protest. As the manager held that they had been in no way badly treated, he refused to have any conferences on the subject, and 475 joiners were at once secured to take the places of those who had struck. The wages paid on this work, as on the bricklaying, were such as to give the employers the choice of all the workmen in the Manchester district, and to enable them quickly to eliminate all undesirable or "go-easy" artisans. And it was a wise investment, this advance of ten per cent. on the local wage, for it enabled the manager to secure one hundred per cent. increase in the value of the work secured.

Mr. Stewart took charge of the work in April, 1901, and in the first part of January, 1902, the whole of the superstructure was finished, a record which made him the most talked-of man in the British building world. Over \$500,000 had been paid out to British labor (there were never more than ten Americans employed in the work), and more than 10,000,000 bricks had been laid.

Of course a great deal of discussion was caused by this record made by the Yankee boss and British laborer working together, and all sorts of opinions were expressed. Prominent trades union leaders said they did

not believe the figures put forward as to the number of bricks laid (they could not deny the time in which the work was finished), and they predicted that the work was so badly done that the first shock of machinery in operation would shake it all down. Mr. Stewart was called upon to tell how he had done the work. Had it been done, as the animal trainers say, "all by kindness"? In a way it had been, although there was no hesitation about showing the iron hand when necessary. But Mr. Stewart believes that the secret of success lay not so much in this as in constant and kindly communication with the individual men. He would go among them constantly with a hearty "Good-morning, boys!" and with frequent encouragement of all kinds for good work done. He fully proved that the volume of the work had not been exaggerated; and finally in response to frequent requests for an opinion on the subject, he wrote down the following maxims in connection with his experience in the unusually successful employment of British workmen:

"First, the men must satisfy themselves that they are to be paid good wages.

"Second, the man who has general charge of the work must understand his own business, and have his work done in his own way, in his own time, and by his own methods.

"It may seem strange to the people of this country, but it is a fact, that the British bricklayers who go to America work side by side there with the best American bricklayers and equal their average.

"It may be to the point if I add that besides bricklaying we have achieved results in the construction of the British Westinghouse Company's works at Manchester not less notable than those to which so much reference has been made. For instance, results have been obtained here by British carpenters just as quickly and as cheaply as I have ever accomplished similar work in America.

"To the unbiased mind, facts like these afford conclusive proof that British workmen, if they diligently apply themselves, do as much as the workmen of any other country.

"Finally, I will say with regard to Union men that if our work has been rapidly executed, it has been greatly due to the interest that has been taken by the representative of the Unions concerned in securing for us the best men that could be obtained."

Mr. Stewart has further said: "There is plenty of snap in the British workman if you only let him see there is snap in you." He is not lagging in the utilization of the force he has more or less discovered and trained, for he has undertaken to "hustle" various long-delayed jobs for the Midland Railway, becoming in fact a consulting and supervising engineer on special work. He has already made another record in stack-construction on

the great chimney he has erected for the Mersey Tunnel Power Station at Birkenhead. He also has charge of the work upon the tunnel itself under the Mersey River from Liverpool to Birkenhead, and of the Yerkes Power Plant for the electrification of the Underground Railway. Besides this, he is flooded with offers to take hold of other work for which he cannot yet find time. This, too, in spite of the fact that he has warned British manufacturers against what he considers their too conservative methods. They do not, he says, appreciate the value of the scrap pile. Experience has taught the American that ten years is about the life of any mechanical appliance, or rather that there is a revolution every decade in methods of manufacturing. So Americans only build their machines with this time limit before them, whereas the Englishman takes time to make his machine good enough to outlast its usefulness.

This record raises the question: "What of the British architect or contractor? Is he not first of all a little above his work, a little ashamed of it, and anxious to conceal his connection with labor? Does he not leave things too much in the hands of his foreman? Is it not again the old trouble that labor is a disgrace to a gentleman in England, whereas it is an honor in America? Or, to go further still, is there not a crying need in British construction generally for a strenuous middle man, a manager, between the architect and the laborer, to see that the one properly and promptly carries out the work of the other?"

Why, when the very feat of bricklaying described here was made public, some progressive member of the London County Council, knowing the interminable delays attending all work done by that body, tried to discover what was the average of the bricklayers in their employ. All that could be got out of the committee in charge was that they laid something more than 330 bricks per man per day of nine hours—say forty bricks per hour. The committee had to confess that it could not obtain any reliable information, owing to the absence of any details as to the actual cost of brickwork to the department! And the public seemed to receive this astounding revelation with complete indifference. Truly the "Wake up, England" campaign, even with the public support of the Prince of Wales, has yet need of converts in other quarters than in the laborer's cottage.

CAN ARBITRATION IN LABOR TROUBLES BE EFFECTIVE?

AT the National Convention of Employer and Employee, recently held in Minneapolis, the most important of the many important questions discussed was that of arbitration. Strong and timely addresses were delivered by such men as John Bates Clark, Professor of Economics at Columbia University; Herman Justi, Commissioner of the Illinois Coal Operators' Association, and Frederick W. Job, Chairman of the Board of Arbitration of the State of Illinois.

Professor Clark discussed: "Is Compulsory Arbitration Inevitable?" In part he said:

"The existence of trusts puts many strikes on an entirely new footing. A motive for yielding to strikes is removed. When one employer out of a score or a hundred in the same industry finds that his men have gone on a strike, he is under strong pressure to make concessions to them. A trust has no such rivalry to fear and can bide its time before yielding to its men. On the other hand, the trust has much to gain, first by holding out till its men are near the end of their resources, and then making some small concession that will bring them back to their work. It can charge the cost of such a concession to the public and exact a large profit besides.

The only compulsory arbitration I am willing to recognize as possible . . . says to a body of strikers, 'Continue at work while we investigate your claims. If you demand only that natural rate of pay which represents what you produce, you shall be protected in your tenure of place. If you ask more, we will announce the rate which is natural and fair, and give you the first option of accepting it. If then you refuse to take it, your tenure of place is forfeited, the employer may put new men in your places, and they will be protected by the fullest power which the State can exercise.'

"This is the only logical outcome of the present anomalous and intolerable condition."

Mr. Herman Justi, speaking on "Arbitration: Its Uses and Abuses," said: "Arbitration's popular, though erroneous, synonym

is 'compromise,' and there is nothing more mischievous than a compromise on any question of principle. Speaking from the point of view of one whose entire time is occupied in adjusting differences between employer and employee in the coal mining industry of Illinois, I say that arbitration should never be resorted to save in an extremity, and that the energy and industry displayed in advocating its general adoption could be better applied to all those simpler and more practical methods of adjustment designed to render arbitration unnecessary.

"The coal operators and coal miners of Illinois came together in 1898 and adopted what is known in the bituminous coal fields of the Central States as the system of 'joint agreements,' or what is called in the school of economics a system of 'joint bargaining.' A wiser, fairer, more equitable system has never been devised. . . . But to me it seems that we can never agree in this country on compulsory arbitration, though in quasi-public enterprises there are times when it might seem to be desirable. Some law may be needed to prevent strikes and lockouts where, by reason of these, travel is stopped or rendered hazardous, or where the supply of light and water is shut off. When such a law, however, is enacted, it must not be left to the agents of great corporations, to our labor organizations, or to the amateurs now clamoring for it, but it must be drafted by the most experienced, the wisest, the fairest and the most far-seeing students, not only of political economy, but of the existing conditions."

"Arbitration from the Point of View of an Arbitrator" was the topic of Mr. Frederick W. Job. Among other things, he said:

"At the conferences of employer, employees and our Board I have always wondered why it was that employers and employees did not get together the way we did then, before the trouble broke out, instead of waiting until a strike or lockout occurred. One of the most frequent causes of lockouts comes from the fact that one side or the other to the disturbance fails to recognize the fundamental facts of the relation which they bear to each other.

"The employer will often fail to recognize the fact that his growing business, the changed conditions which are attendant upon such growth, the employment of new foremen and bosses and the actual condition of the laborers should receive his careful attention. The employer, too, often makes the mistake of not getting closer to his men and understanding their situation and circumstances. The workman, on the other hand, is often too prone to assume that increased prices, a large establishment and more material evidence of a growing institution means that all this growth was produced exclusively as the result of his toil. He makes the mistake of assuming that because there are more employees in the factory than formerly, the manager or owner of the business has forgotten him, and that he cannot see the president or head of the concern.

. . . We coupled with our invitations to combatants the guarantees:

"First—That a conference with each other and with our Board would do them no harm, if it did them no good, and would at least leave them where we found them, if it did not settle the trouble.

"Second—The Board could be relied upon to carry no tales from one side to another.

"Third—That it would not cost the contestants one cent; that the State paid the bills.

"We find that when we have reached the point where we can get the employer and

employee to agree to meet and reason together, they are always well on the road to reconciliation. . . . One of the most important features of the present Illinois arbitration law provides that where industrial disputes occur in which the public is affected, with reference to food, fuel, light or the means of communication or transportation, or in any other respect, and neither party to such strike or lockout shall consent to submit in the matter of controversy to the State Board of Arbitration, the Board, after having first attempted to affect a settlement by conciliation, shall proceed of its own motion to make an investigation of all facts bearing upon such disturbance, and make public its findings, with such recommendations to parties involved as in its judgment will contribute to a fair and equitable settlement of the differences which constitute the cause of the trouble; and in the prosecution of such inquiry the Board has the power to issue subpoenas and compel the attendance and testimony of witnesses, as in other cases.

"We do not think that there is any short cut to the solution of all labor troubles. We do not claim to have a panacea for every case. There is one thing this Board does find, however, and that is that a great many employers and employees who formerly were the last to consider the matter of conciliation or arbitration are now the most eager for it."

THREE NOVELISTS OF SINCERITY AND CHARM

MR. HOPKINSON SMITH'S "OLIVER HORN"

MR. F. HOPKINSON SMITH'S "Oliver Horn" is an orderly, well-built, well-bred, sympathetic story, clean and lovely; and it contains two pictures of life that ought to give it an historical value—a picture of the ante-bellum society about "Kennedy Square" in a Southern city, and a picture of the rollicking Bohemian life in New York in the early sixties. It is a book that every cultivated reader will get pleasure from—a pleasure, too, that does not pass with the reading.

The story begins in a Southern city just before the Civil War. Young Oliver Horn, well-born and intended by his parents and

traditions for the law, must while yet a boy earn his living, because the family fortune is waning. To work in his native city would be to incur social disgrace. He therefore goes to New York to seek his fortune, and he becomes a shipping clerk. His ambition was to become a painter, but in his native circle a painter was regarded as a mere idler. The story is of Oliver's toil to make a living and to aid the mortgage-ridden family, and at the same time to learn the art that he must learn for his own development and happiness. His long struggles in New York, his happy love experience and his triumph—these make the perfectly natural, smoothly flowing story. The tale takes the reader into the New

England mountains, too, where the attractive heroine lives; and life there and life at the South are brought into wide contrast. Political contrasts, social contrasts, the contrasts of occupation, give the book both stability and charm.

But (as in every novel that is worth while) the people in it make it what it is. Oliver's father, Richard Horn, the old free negro butler Malachi, Oliver's mother and the intimate friends of the family—these all become permanent additions to the reader's acquaintances: charming acquaintances every one of them. And there is no other such picture that we recall of artist life in New York nearly half a century ago. There are interesting persons, good manners, honest struggles, well-won triumph, good times in the book, and so carefully is it all wrought out that the incidental musical and artistic atmosphere that pervades it gives it an additional charm and distinction.

Mr. Smith's "Tom Grogan" and "Caleb West," to say nothing of his shorter tales, were real books, and not books made to order; but "Oliver Horn" leaves them far behind, both in its construction and in its literary workmanship. It is a tale to love for its truth and charm—a book to own and to recall. Old Richard and Malachi will often come to your mind long after you have put in on the shelf, and you will find more pleasure in recalling "Oliver Horn" than in reading a long list even of the cleverest new stories that come in the flood of the year's novels. It is the kind of book that would have been written if there had never been a flood of novels; it is the book that Mr. Smith has been writing toward and in preparation for since he made his first effort in fiction. The more you think of it, weeks after you have read it, the more grateful you become for it, and this notice of it is meant less as an appraisal than as thanks. It is the best product of a very versatile man of unusual gifts and grace and a piece of fiction of a very high kind indeed.

MISS GLASGOW'S NOVELS AND POEMS

MISS GLASGOW has now won as enviable a place as any young writer of our country holds; for her work has a deep seriousness as well as a serious art. Four novels and a book of poems now stand to her credit, and a good measure can be made from them of her achievement and of her promise.

Her earlier stories, "The Descendant" and "Phases of an Inferior Planet," attracted attention because of their remoteness from the commonplace. They were strongly individual books. They had nothing in common with the mass of current fiction; they showed

a determination to see life at first hand and to report it frankly. Miss Glasgow revealed in them the Southern love of that ideal of manners which is deferential and charming to women and resolute and commanding with men; and she showed courage and frankness in the expression of emotion; but she had a wholly modern freedom of mind, a determination to see life on all sides and to see it with perfectly cool and clear vision. She betrayed a high degree of femininity, too, in her sensitiveness to the charm of mature social life, but she showed also the deeper insight which deals with the formative forces of character and the courage which does not flinch from the darker facts of existence.

"The Descendant" and "Phases of an Inferior Planet" were vigorous, unconventional novels, but their material was of that kind of tragedy which lies aside from a perfectly wholesome view of life. They were clearly the work of an independent and vigorous mind, more accustomed to study than to observation. The force of the writer was in advance of her experience; her passion to know life was in excess of her knowledge. The faults of the stories were the kind of faults that a far-sighted critic does not dwell on—faults of a strong nature finding its way to an individual point of view and an individual reading of experience.

When "The Voice of the People" appeared it was clear that the gap between vision and knowledge had been closed and the promise of the earlier stories had been fulfilled. This novel happily illustrates both Miss Glasgow's hold upon tradition and her open-mindedness. It is an admirably composed and shaded picture of the old and new South in contact and, to a certain extent, in conflict. The refinement and the dignity of the old order, expressed in the obsolete community that it pictured and in the bearing of its lovely people, did not prevent her from recognizing and placing as just a value on the dignity of a strong character expressed in aspiration and struggle. The novel is one of orderly development, sane, wholesome and well balanced. Miss Glasgow had passed from the problems of a very active and vigorous imagination, working in surroundings which it had arbitrarily created, to a simple, direct and deeply sympathetic dealing with emotions, conditions and experiences which she knew at first hand. The style of the story showed a significant advance in steadiness and mastery. It is well constructed; the contrasts of ideals and of conditions are striking but not violent; the action is inevitable; and, although it is tragic, it is not without a note of hope. The

background of scenery and of history is sketched accurately, but not too minutely.

"The Battleground" registered a further advance in her art. It has the vigor of the earlier stories, and it has also a quality which they lacked. It is finely dispassionate and, in dealing with episodes and events which inflame the imagination of many writers in the exact degree in which they put heart into their work, it is artistically impersonal. In this, as in the earlier stories, the reader feels himself in contact with intellectual power of a high order; with a clear, cool, penetrating mind which works through the imagination, but never loses clearness of vision. Miss Glasgow's skill is evident in her treatment of the episode of the Civil War, which is broadly presented by means of significant details—details which, without wearying the reader or interrupting the flow of the narrative, produce a culminative effect of tragic significance. In "The Battleground," as in "The Voice of the People," the tragedy is resolved at the end, as a tragedy in the hands of the greatest writers must be, in the first foreshadowing of a new order.

In this combination of sympathy with old and comprehension of new conditions, Miss Glasgow, by the way, holds a place by herself among the novelists of the South. They have, as a rule, felt the charm of the older social order so keenly that they have been content to depict it and to leave the deeply interesting aspects of contemporary life unrecorded. Not so she. Indeed, she uses her material, Southern or Northern, ante-bellum or post-bellum, as a great writer should—for what it is worth to her purpose and in her handling. She is not a "Southern" writer nor a "Northern" writer, but a writer of human life as it develops itself everywhere under the conditions that her stories naturally find. She has understood and practised this law of the best writing and has escaped the snare of provinciality.

In this confidence in the quality of her material to make its charm felt she has shown the independent vigor of her mind and compelled the judgment of her work by reference to universal standards. She writes as a woman, but with a vigorous masculine element in her work; a faculty of detachment, of seeing things apart from her own personal affiliations, or letting things speak for themselves without too much manipulation for dramatic effect. She has perhaps the richest field that any American novelist has taken; and the vigor of her mind and the thoroughness of her methods make it clear that she can add this great field to the geography of our permanent American fiction.

Miss Glasgow's latest book is a volume of verse, "The Freeman and Other Poems": a slender book, but individual in thought and expression. Most of these poems are in the mood of her earlier work. They present some of the darker aspects of life, and present them with daring and vigor. There is an almost uncompromising effort to face the worst and to interpret it with relentless frankness and with a fine philosophic courage. Whether this attitude represents a mood or a conviction—perhaps both—it is certain that in this book, as in her prose, there is freedom from the commonplace and an original power. Observe the quality of the following:

The trumpet of the Judgment shook the night,
Dust quickened and was flesh; grave clothes
were shed;
With moaning of strong travail and lament,
The sea gave up her dead.

One, rising from a rotting tomb, beheld
The heavens unfold beneath Jehovah's breath.
"Great God," he cried, "with Thine eternity,
Couldst Thou not leave me Death?"

Miss Glasgow has steadily gained in power and in skill since her first book. Her work has not yet reached her highest capacity. She has not forced her growth. She has worked without reference to applause or to popularity, but in obedience to her own high standard as one who works for permanent distinction. We have no novelist who shows a higher aim.

MR. OWEN WISTER'S STORIES OF AMERICANISM

WHAT'S the book?" asked a lazy voice. It was nearly midnight at the Cripple Creek Club, and the speaker, citizen of many mining camps, sprawled negligently in an easy chair.

The book was "Lin McLean." I explained a little.

"Author from the East, you say?" he caught up. "Funny about these Eastern fellers chasin' out here to put us in note-books. S'pose Boston's forgotten Bret Harte—thinks this new feller's the whole Rocky Mountain shootin'-match, eh?"

"No," said I; "not yet."

"Let me see it," he broke out disgustedly.

When I went to bed his chin was resting on his breast and his eyes were galloping along the lines.

"Thanks to you," he said next morning, proffering the book as I was climbing to a dusty wagon-seat. "That feller knows his business. He ain't Bret Harte, but he's got a claim, and it's the real thing, sure. It's a strike."

"I wish you'd keep it if you like it," I ventured.



MISS ELLEN GLASGOW
AUTHOR OF "THE BATTLEGROUND," ETC.

"Wait a minute," he jerked out to the driver.

"Say we swap," he exclaimed, returning; and he handed me a bit of blue rock all shiny with pyrites but richly speckled with duller gold. I took it, demurring, for, commercially, it was not a fair exchange. Now, however, I feel a peculiar fitness in the trade: my prospector's whole-souled recognition of "Lin," "the Governor" and the taciturn Virginian as living types made his gold-shot bit of blue rock a symbol, in the book's absence, of the book itself.

For as Bret Harte took full measure of Sierran miners and the full-blooded life of early California, Mr. Owen Wister, not only in "Lin McLean," but in "Red Men and White," "The Jimmyjohn Boss" and "The Virginian," has exploited the essential spirit of frontier Wyoming and Arizona, "the Cattle people and the Cattle country, with the plains and mountains where they lived, all wholly American, of our blood and soil." And the gold dug from Colorado hills is not more precious than just this large spirit phrased in narrative not merely exhilarating for the graphic plausibility of what it tells but inspiring for the deep suggestiveness of what it means. The brilliance of the vivid Western background and the tingling magnetism radiated from the passionate frontier life in Mr. Wister's stories sting with the sort of delight that Mr. Kipling's narratives yield. The dramas develop with an insistency not unlike the quality of those tales that Bret Harte gave the *Overland Monthly* over thirty years ago, and they bite indelibly. But there is more. With his quick-pulsed stories of cowboys and Indians and soldiers, hard women of that lynch-law belt now gone, and the gentle women "steel-true and blade-straight" who brought the refinement of human sympathy beyond the Missouri "in the good old days before the wire fence," Mr. Wister's work expresses with some success what precious little other American fiction tries to express—Americanism.

Mr. Wister is a Philadelphian forty-two years old, a Harvard man who went West for his health on graduation, and sixteen times afterward for love of it. In ten years he has written short stories of the West which, garnered, make four volumes—mathematically, it might be noted in a slipshod age of garrulous, dictated fiction, one book in each two years and a quarter. Give credit for loving artistry in that. Yet very slowly did he enter his popular heritage, keen and quick as some critics were to see a new force in this work that breathed so electrically of a land

and a people more American than any east of them. But now that "The Virginian" has come into a blaze of popularity, it is well to value Mr. Wister's results.

Mr. Kipling sings in a ballad "The East is West and the West is East." In the United States the West is Eastern; the East is very far from being Western. To catch the deeper meaning of our life, one's path must lie toward that Western verge of the continent where all white men are American-born, because there only are the culture and the conservatism of the East, the chivalry and the fire-eating spirit of the South and the broad unhampered gambler's view of life native to raw Western soil, all transmuted into a Democracy of no distinctions except the intrinsic. That combination, with other elements of course, is the United States in essence, found only in the West, and that is what Mr. Owen Wister expresses.

In Wyoming and in Arizona before the wire-fence men played a man's game, that quality counted most—in man or woman—that the Virginian yielded to Queen Elizabeth when he wisely said of her: "She would have played a good hand at poker." Each man played according to the measure he had taken of his neighbors. Reticent brotherliness marked friends; deference was accorded all sincerity; and humor, mainly grave humor, touched every relation of life.

All this Mr. Wister symbolizes in the life of his boyish, slightly limping Lin McLean, in the heroes of his briefer Iliads, and in the romance of the lithe Virginian whom Mr. Wister inscrutably keeps nameless. But observe that Lin McLean, from Massachusetts, after his tragic but humorous experience with the oddly human Lusks, loves Jessamine Buckner from Kentucky, and the Virginian—strangely reminiscent of the Confederate officer—wooes a descendant of Molly Stark from Vermont. And each one carries to the complex drama unraveled in raw Wyoming some motives traditional in each provincial section. These, with passion mixed and pure, native ideals low and high, and the frankest and richest humor, is the stuff of which an American literature shall be woven.

It is not enough to say of Mr. Owen Wister that he capably carries on the Bret Harte short story tradition, or that "The Virginian" is a vivid narrative of exceptional power, especially moving in its story of the cowboy's love. Mr. Wister has also sharply blazed the way to that quite possible impossibility, the American novel.



MR. OWEN WISTER
AUTHOR OF "THE VIRGINIAN," ETC.



MR. F. HOPKINSON SMITH
AUTHOR OF "OLIVER HORN," ETC.

From a painting by Oliver Hazard Perry

"EUROPE *versus* AMERICA"

A REVIEW OF THE WORLD'S RECENT INDUSTRIAL CHANGES AND PRESENT TENDENCIES—THE GREAT FACTS MADE PLAIN BY RECENT DEVELOPMENT: THE HOME MARKET MORE IMPORTANT THAN THE FOREIGN; THE GRAVITATION OF POPULATION AND CAPITAL AND SKILL TO THE SOURCES OF WEALTH SUPPLY; THE PATRIOTISM OF INDUSTRY—THE NECESSITY OF EUROPEAN INDUSTRIAL AND POLITICAL ORGANIZATION TO OFFSET THE SOLIDITY OF THE UNITED STATES—A WORD-WIDE FORECAST OF THE FUTURE

Being the Rectorial Address delivered at St. Andrews University, St. Andrews, Scotland, October 22, 1902

BY

ANDREW CARNEGIE

I THOUGHT that I might interest you by considering a subject now attracting wide attention—the economic changes which have come and are impending in the relative position and power of nations, since it has been necessary for me during my business career to watch and study these and to base action upon them. The growth of nations in wealth and population, the social conditions and aptitudes of their people, natural resources, prospects, ambitions, national policy, all bore directly upon our problem.

It was upon no easy task that the American manufacturer entered when he determined to struggle for place for his country among manufacturing nations, and it behooved those who risked their capital, or incurred debt in the attempt, to keep a wary eye upon the doings of their established competitors, and weigh future probabilities of development in other lands.

In studying the manufacturing world, Britain claimed more attention than all other nations together, for here was the seat and throne of manufactures. We examine the globe and note how much is marked red under the Union Jack, and speculate upon what would be left if this were obliterated. But if in viewing the world's material development we should consider what would be left if her inventions were deleted, a greater void still would be found in this nobler field of conquest, for this island has also been the seat and throne of invention, the work not of the barbarous sword, but of the brain of civilized man. That development rests upon the steam-engine of Watt, one arm of which embraced the sea through the steamship of Symington, another

covered the land through the locomotive of Stephenson. Here is the great triad which has created the modern material world. This audience will not fail to note with satisfaction that all of these magicians were Scotch (the first two native-born, the last by descent)—a remarkable fact, and not to be readily accounted for except upon a hypothesis which national modesty prevents a born Scot from suggesting here in the presence of so many distinguished members of other nations. Arkwright, Hargreaves and Cartwright, through their inventions, brought economical spinning and weaving of textiles; those of Nelson and Cort, cheap iron; Bessemer, Siemens, Martin and Thomas, cheap steel, the most important article of all, since it is the basis of so many other articles. It is the inventions of these men based upon steam that have revolutionized the conditions of human life upon the earth, and, in passing, will you be good enough to note how many of these, and indeed of the supremely great in other fields as well, have at first worked with their hands? Whatever the future may have in store, nothing can rob Britain of the credit of having given to the world the means for its surprising development. Material Progress is Britain's child. At the time of which I speak, she was the only important manufacturing nation, for here naturally her inventions were first utilized. The reward obtained from this monopoly—for such it was—made her the richest of all peoples *per capita*. Her realized wealth is still unequalled. Forty odd years ago she made more iron and steel, manufactured more machinery, mined more coal, wove more cloth, than all the rest of the world. It was Britain in the one scale, the world in the

other, the world kicking the beam. In the dawn of this prosperity came Cobden and Bright, who insured cheaper food for the workers, which further stimulated manufacturing and insured Britain's preëminence. The theories of these great men and their school were justified in their day, one being that the various nations of the world were created with different qualities and resources, all so beautifully arranged that one was to supplement the other. Britain's destined part clearly was to manufacture the raw materials of other lands. Interchange, of raw and finished and of different products, was evidently Nature's intention, thus uniting the nations in the noble task of supplying each other's wants. Nations were destined to be coöperating parts in one grand whole, and thus Commerce became the golden chain to bind the world in bonds of peace and goodwill. There was only one flaw in the entrancing theory, but that was fatal—the various members were not satisfied with the parts assigned to them in the beneficent drama. On the contrary, each evinced the strongest desire to develop its resources and manufacture its own raw materials as far as possible. None relished being the mere hewers of wood and drawers of water to another nation: all wanted to play Hamlet, and as is usual in the most talented companies of performers, all believed themselves destined by nature for the great part. There came to the aid of the new ambitious lands, automatic machinery and scientific methods which largely solved the question of skilled labor. A few managing Britons, or Americans, can now readily be obtained to establish manufactures in any part of the world, and educate the natives to become satisfactory workers. In my travels round the world I carefully noted this weighty fact. I saw the peons of Mexico weaving cloth in factories, and engaged in iron and paper works, at two and three shillings a day in silver, worth only one-half value in gold; the people of India, the Japanese, and the Chinese, all doing excellent work in cotton and jute mills; the negroes in the United States steadily rising in the scale and becoming good workmen in mines and in iron and steel works; the Russian, Hungarian and Italian, Swede and Norwegian, all making good workmen. Capital, management and skilled labor have become mobile in the extreme. The seat of manufacturing is now, and will continue to be,

more and more simply a question where the requisite raw materials are found under suitable conditions. Capital and skilled labor have lost the power they once had to attract raw materials; these now attract labor and capital. The conditions are reversed. The cotton industry, for instance, was attracted from Old to New England, and is now attracted from it to the Southern States alongside the raw material. The jute industry, once centred in Dundee, is now also established in India, near the jute supply.

Another factor is clearly seen: the most patriotic people of every land consider it a duty to develop their resources. Hence Canada to-day gives twelve shillings a ton bounty for every ton of pig-iron produced, and Australia has a scale of bounties, and has just offered a large one for the manufacture of steel rails. They are not content to be dependent even upon the Motherland for manufactured articles. Germany, Russia and America give protection, and all the colonies tax your productions, thus giving their home producers incidental protection.

Another element enters. Business methods have changed in the past twenty years; manufacturing especially has been revolutionized by new inventions, improved machinery and new and enlarged demands. The old rule of thumb has given place to scientific precision. The Technical Schools furnish the young foremen and superintendents. Automatic machinery has developed a new class of workmen more intelligent than the old. The size of works has increased tenfold, and instead of partnerships devoted to one process, all processes, from the minerals in the mine to the finished articles, are combined in one. Railroads are constructed and fleets of steamships built and worked, all the needed materials are owned, the company is its own insurer, and everything entering into the product or needed to maintain the works is made by it. One by one subsidiary branches or new departments are added, and from a score of small streams of profit, unknown to the small producer of the past, the main stream is fed. So rapidly does one improvement follow another that some parts of the huge concerns are constantly undergoing reconstruction. Old-established works are seriously disadvantaged by the new order of things, especially if under joint stock ownership, because it is difficult to get from numerous small owners the capital needed for

modern improvements. Hence the old countries, and particularly Britain the pioneer, have been disadvantaged, and the new American land, with a clean slate to begin upon, much favored.

The causes specified have already changed the positions of Britain and America as industrial powers. America now makes more steel than all the rest of the world. In iron and coal her production is the greatest, as it is in textiles—cotton, wool and silk. She produces three-fourths of the cotton grown in the world. The value of her manufactures is just about three times that of your own; her exports are greater. The Clearing House exchanges of New York are almost double those of London in amount. She furnishes you with most of the necessary food products you import. She has two-fifths of the railway mileage of the world. Thus she has become the foremost nation in wealth, manufactures and commerce, and promises soon, in some branches, to occupy the position which Britain occupied when it was Britain *versus* the world. She already does this with steel. Although no Briton can be expected to see with satisfaction his country displaced from first place, there is yet cause for rejoicing that supremacy remains in the family. It is not altogether lost what the race still holds. Macbeth's fate is not Britain's. The scepter of material supremacy has been wrenched by no unlineal hand. It is her eldest son, the rightful heir, who wears the crown, and he can never forget, nor cease to be proud of, the mother to whom he owes so much.

The relative position of Germany has also changed. She has forged ahead, her product of steel being now second to that of the United States. In other departments her rate of increase is also great. She promises to run Britain close, perhaps by the end of the decade, for second place as a manufacturing nation. During the ten years previous to 1900 she added five and a half millions to her population, and almost doubled her production of iron, and increased that of iron ore from eleven to nineteen millions of tons.

In comparison with these three countries others are of trifling moment in the production of staple articles for export, always excepting that giant of the future, Russia, whose latent resources are enormous, and whose growth is so steady, not only through increase of population, but through accretions of contiguous

territory. She must occupy a great position, but not in our day, nor perhaps in the next generation: if she hold together, she will be a continent under one government like the American Union, although, as far as known, not with comparable resources and conditions. She has employed more than one of my former assistants to construct and manage steel-works, and is vigorously developing her resources in many lines. Her production of iron has doubled in the last twelve years. Coal mined in 1880 was six million tons, and in 1900, ten years, sixteen millions—an extraordinary increase. The cotton industry has also developed during the ten years. It is probable that she will soon supply many of her own chief wants, great as these are to be; but as these will be largely additions to present world needs, this will not greatly lessen the trade now tributary to other nations.

Belgium, for its size, is the most wonderful of all manufacturing nations, but too small and fully developed to play a greater part than now in the world's trade. One notes with surprise the magnitude of her commerce. Exports and imports *per capita* much exceed those of Britain, exports being as 11.4 per head to 6.14—almost double; even her imports are greater.

France occupies a unique position. She may be said to have, in the artistic quality, substantially a monopoly most difficult to break. Till women reach the height of wisdom attained by man and establish a uniform and unvarying style of dress, and as long as articles of luxury are in demand, and till men reach the wisdom shown by women in regard to French wines, so long will France remain in the first class of nations, although much further increase of her trade is not probable. I might also say that as long as the French people remain so industrious, frugal and free from the vices of other lands, gambling and drinking, so long her position is secure. It is significant that the silk trade of Britain has passed entirely into her hands, and that in motor machinery she is preëminent in Europe. The Swiss Republic may be included in what has been said of France. It is a wonderful little manufacturing centre. A splendid race the Swiss, who are often described as the Scots of Continental Europe, and very highly valued in America.

In our survey of the world the efforts of Canada and of Australia to manufacture were not overlooked. Nothing ever found or heard

of in either of these lands was calculated to deter us from going forward without fear. If the United States had not transcendent resources, and an unequaled home market that enables it to sell its surplus to Canada cheaper than Canada can possibly produce, manufacturing might be established to some extent there. Under present conditions the outlook is not favorable. In Australia so little has been done, and, so far as I know, so little has been found of a favorable character, that it need not be reckoned with at present. Neither is ever likely, as far as yet seen, to be important factors as manufacturers for the world's trade.

In India, China and Japan the textile industry has taken firm root, and in the latter an attempt is being made to build warships from domestic products; but in none of these countries did I see much prospect of rapid or extensive development, except in textiles, one reason for this being that while the home market for these is great, it is small for machinery, steel, and other branches of our diversified industries of the West. The absence of a large home demand is a serious, almost fatal bar to the introduction of any new article of manufacture which must be produced upon a great scale.

From what has been said it will be inferred that the manufacture of staple articles for the world is to be chiefly conducted in our time and in the next generation by the three countries, Britain, Germany and the United States, France retaining her own domain, although the smaller countries will increase their industries and supply a greater part of their own wants.

In the race for the world's trade between these countries several considerations are important. *First*—let this vital fact be noted—the most powerful weapon for conquering foreign markets is a profitable home market. It might also be taken as an axiom that the nation fortified by the best home demand for any article will finally conquer the world's trade in that article in neutral markets. In economic circles "the law of the surplus," as I have ventured to call it, attracts increasing attention. Manufacturing establishments are increased year by year until they become gigantic, simply because the more made the cheaper the product, there being a score of cost accounts divisible by product. By giving men constant employment, and having a repu-

tation for never stopping, the best men are attracted and held—an important point. The manufacturer upon a large scale can afford to make many contracts in distant parts of the world, and even some at home, at a direct loss in times of depression, knowing that, upon the whole, the result will be less unprofitable by running full than running short time or stopping. Hence, those possessing the most profitable home market can afford to supply foreign markets without direct profits, or even at a loss whenever necessary. I speak from sad experience on this point, for during most of my life we have had to encounter Britain's surplus in our markets in times of depression here, to the great disadvantage of the home producer and advantage of the British manufacturer. This position the United States now in turn occupies toward Britain and other manufacturing countries, since it has the greatest and most profitable home market, not only for steel but for most articles. Invasions of Europe, and especially of Britain, by American manufacturers are not to be apprehended to any considerable extent, except at rare intervals. It is not the amount imported, however, that discourages the home producers; the knowledge that he is open to serious competition from abroad, a small amount of which will break his market, is what makes him loath to invest the great sums sometimes necessary to keep him in the front, and robs him of the do-or-die resolve, which often is of itself the secret of victory in the struggles for life.

Second, the question of population bears directly upon the industrial development of nations, since increased numbers expand the home market. There are today 78,000,000 of people in the American Union. More than 600,000 immigrants from Europe will have landed on her shores this year. Her rate of increase between 1880 and 1890 was just about three times that of the United Kingdom. Last decade it was not so great, although more than double, having fallen, because of five years of depression caused by an agitation upon the standard of value, the most disturbing of all economic questions. Nevertheless she added 13,500,000 to her population. This decade, even at no greater native rate of increase than the last, will add more than 15,000,000. Every morning the sun rises it greets more than 4,000 new faces added to the Union.

Germany's population is 56,000,000; she added 5,500,000 last decade. The increase of the United Kingdom was 3,600,000. It is a serious disadvantage to Britain in the contest that her home market cannot expand as rapidly as the American, or even the German. Size of productive territory, as affecting population, is a prime factor in the race for the first place among nations in material production.

Third, we see proofs of another important law. Just as raw materials now attract capital and labor to any part of the world, so untilled fertile soil increases and attracts population. We note the rapid increase in the Mississippi Valley, and that America is consuming more and more of its own food supplies. It already manufactures as much of its enormous total cotton crop as Britain imports, and not more than 10 per cent. of all its field crops, except cotton, are ever exported. Wherever food products can be grown profitably people will increase until the limit of food supply is reached. Where exceptional conditions exist, such as valuable minerals, population may remain in excess of the food supply, as with this favored island; but permanently to maintain population beyond food supply, a nation must be able to supply needed articles to so much better advantage than the purchasing nations can produce or procure them as to enable it to endure the disadvantage of higher cost of food.

It seems clear that the spread of manufactures will be so general that the leading nations will finally supply most of their principal wants—at least to a much greater extent than hitherto. It follows that exchange of articles between nations, "Foreign Commerce," is not to increase as rapidly as exchange of articles within nations, "Home Commerce." But the unceasing growth of the world will nevertheless probably keep British, Belgic and French foreign commerce and manufacturing at their present figures.

There is a great difference between a home and a foreign market, which is not much dwelt upon in Europe, to which I invite your attention.

Exchange of products benefits both buyer and seller. With British home commerce both are Britons; with foreign commerce one only is a Briton, the other a foreigner. Hence home commerce is doubly profitable. And this is not all. When the article exported, such

as machinery or coal, for instance, is used for developing the resources or manufactures of the importing country, and enable these to compete with those of the exporting country, the disadvantage of this foreign Commerce to the seller, except the profit upon the sale, is obvious. How different when the machinery is sold at home and develops home resources continually.

Here is another important point. The relative importance of the two markets is often lost sight of. The home market of America takes ninety-six per cent. of all manufactured articles, only four per cent. going to foreign markets. Even Britain's home market takes four-fifths of her manufactures, only one-fifth going abroad. Politicians give far too much attention to distant foreign markets, which can never amount to much, and far too little to measures for improving conditions at home which would increase the infinitely more important home market. If the people of the United Kingdom could spend even one pound per head more per year her home commerce would be increased more than the total value of her exports to all of Australasia, British North America and China combined. Truly foreign commerce is a braggart always in evidence, home commerce the true king.

In studying the industrial positions of nations, imports and exports are misleading. The undue attention still generally bestowed upon these by writers upon economics here is surprising. Arguing as they do who judge of a nation's prosperity by its foreign trade, America's prosperity today is lessened because her manufactured exports have for the day declined, which is, on the contrary, the best proof of extraordinary prosperity, for America at present needs all its manufactures in some branches for its own development. Happy country whose steel builds railroads, ships and other structures in its own territory. It is not what is exported, but the amount produced, that shows a country's condition, and what is not exported but put to profitable use at home is, as we have seen, doubly profitable.

The habits, conditions, intelligence and spirit of the masses are important elements in the industrial race, and we gave close attention to these as bearing upon our task. The German, as we know him at home and in the United States, is a valuable man, steady, sober, methodical, thorough, self-respecting, of fine domestic tastes, an admirable workman

and superintendent. Thanks to the conscription of Germany, among other causes, we had many thousand of Germans in our service, of whom at least four whom I recall became partners and earned the millions of dollars they obtained. They fled from the conscription of their sons, and today the son of a German who left his country largely for the same reason is at the head of the greatest manufacturing corporation in the world. We owe a valuable invention to one of these men. The value of the German element to America can scarcely be believed except by those who, like myself, know it by experience. The total emigration from Germany and Austria-Hungary has about equaled that from Great Britain and Ireland. It may be accepted that if ever Britain resorts to conscription, the Republic will be still more enriched than it has yet been by one class of emigrants who will come in greater numbers than ever, even more valuable per man than the German—the Scot; and that many more than ever of the most valuable men of England—a splendid strain when they reach the "open mind"—will leave their shores for the land which knows not conscription.

One is not wrong in believing that it is the ablest and most ambitious who leave their own land—men who have saved enough to enable them to reach and to start in the new; that they have saved being the best possible proof of their value. One such emigrant is worth to America a score of inert stay-at-homes. One census showed that more than half the total number of Scotch emigrants were engaged in manufacturing. The three most celebrated pioneer manufacturers of iron in the United States were Scotch—Burden of Troy, Dickson of Scranton and Chisholm of Cleveland. The American is efficient beyond other men because compounded of the best of other nations and developed in a climate under political and social conditions all stimulating beyond any to be found elsewhere.

In comparing Britain with the Continents of Europe and America, much is seen unfavorable to Britain's industrial position and to the comfort and happiness of her people, both employers and employed. The former fail to give business the unremitting attention and to display the energy and enterprise of the founders of the practical monopoly of the past. They generally regard it as only a means to win entrance to another rank of society.

The employed think too much of how little they need to do, too little of how much they can do. Both classes still take life easy in this day of competition which only the day of established monopoly could support. Employers would find it much to their own interests to give to their ablest employees shares in the business. The more given in this form the more would flow to the employer. The great secret of success in business and of millionaire-making is to make partners of valuable managers of departments. The contest between the old and the new lands today resembles that between professionals and amateurs. It is in their workmen that the Continent has one of its chief advantages over Britain, and America over the Continent, for even the German has to yield the palm to the compound British-German which makes the man of the more stirring New World. He could not be more thorough or methodical than the German, but he is more active and more versatile. Wages of skilled labor, though higher in Britain than in Germany, are not so much so as to rank in importance with the factors stated; the difference between the two is trifling as compared with that between Britain and America. It is not the lowest, but the highest paid labor, with scientific management and machinery, which gives cheapest products. Some of the important staple articles made in Britain, Germany and America are produced cheapest in the last, with labor paid double.

The two continents have another decided advantage over Britain in the sobriety and regular habits of their workmen. The broken days of Britain both handicap the employer and injure the workman.

In viewing the immediate future of Britain without misgiving, as far as maintaining her present trade is concerned, I count upon the inherent qualities and capabilities of our race, which, lulled to drowsy inactivity by prosperity under highly favorable conditions, are bound to be again aroused by adversity, more or less severe, under strong competition. There is such wide scope for improvement that the most despondent may be encouraged; nor does the reform imply want or suffering, or less desirable conditions of life for either employer or employed. Far otherwise. That the drink bill of this country, now reaching the incredible figure of £160,000,000, should be cut in half, or only a quarter or less of it left,

or better still, if only £20,000,000 were left, implies not the degradation but elevation of the people. That the sums risked by both masters and workmen in gambling, and the greater injury wrought in the waste of their time and thoughts, should become evils of the past, would improve the poor slaves of this habit. That they should smoke less would not render life less happy nor health less robust. There are now spent upon tobacco per year £32,000,000: better if half or more were saved. And so with many of the rude sports: better if these were abandoned. From these evils the Continent and America are comparatively, and in some cases almost entirely, free.

The peace expenditure and debt charge of the four principal Powers stand thus *per capita*:

	Expenditure.	Debt Charge.
United Kingdom, . .	£3. 10s.	8s. 6d.
Germany,	2. 1s.	1s. 7d.
Russia,	1. 15s.	5s. 2d.
United States, . . .	1. 8s.	1s. 10d.

Germany's position financially is remarkable; that of Britain in contrast deserves careful attention.

That Britain's present population, wealth or trade in the aggregate are to decline is unlikely. I believe these may even increase somewhat in the immediate future. Her wealth, climate, geographical position and resources are superior to those of any country in Europe, some of which, because of these very advantages, are allowed to furnish her with products which she herself could produce. They get the crumbs which fall from her more luxurious table. That busy hive, Belgium, for instance, sends her articles to the value of £21,000,000 yearly, £3,000,000 of this being cloths and yarns, £1,500,000 iron and steel. Germany is permitted to send £1,000,000 worth of cloth goods and £1,000,000 worth of butter and eggs. France sends silks and woollens to the value of £18,000,000; leather goods, £1,750,000. Little Denmark, with a population not much exceeding 2,000,000, supplies Britain to the extent of nearly £12,000,000—almost as much *per capita* as your total exports. Denmark receives £7,000,000 yearly for butter and £3,500,000 for bacon and eggs. The latter item equals the total value of all you send her. Norway, Sweden and Holland send her £1,500,000 worth of butter, and the latter also sends gloves and glassware

valued at £1,000,000. Here are £60,000,000 worth per year of foreign supplies, most of which Britain could herself produce, and will produce if ever she fails to find more profitable occupation for her own people, as she now does, or if ever her people become as industrious as those of the Continent, thus obtaining a permanent home market almost equal in amount to one-quarter of all her foreign exports.

Thus Britain alone among European nations holds in reserve an important home market capable of yielding profit equal to at least one-third or more of all her present export trade, since home commerce is doubly profitable. Here lies an untouched mine of wealth. She has in her unrivaled supply of coal, as far as Europe is concerned, another mine of vast wealth.

There is one dark cloud upon her horizon which cannot be ignored. From the best information I can obtain, in twenty or twenty-five years the supply of Cleveland iron-stone will be practically exhausted at the present rate of production, except that two concerns will then still have sufficient for some years longer. The Cumberland supply is already nearly exhausted. This will bring dearer iron and steel. Without cheap iron and steel the construction of ships and machinery of all kinds, and of the thousand-and-one articles of which steel is the base, would tend to decrease; but the loss in this trade may be compensated for by increase in other branches, caused by the ever-growing wants of the world. Britain is not alone concerned in the iron-stone supply, for, as far as I know, the supply is soon to become precarious in some of the other manufacturing nations before many decades pass unless new sources of supply are discovered. Even the United States has a proved supply of first-class ore only for sixty to seventy years, and a reserve of inferior grades which may keep her supplied for thirty years longer, say for a century in all, unless the rate of consumption be greatly increased. The enormous extent of territory in the Republic over which ore can hopefully be looked for encourages the belief that new deposits are sure to be found. It is upon new discoveries that Britain depends, the outlook in her case being less hopeful. Germany has today, as far as proved, the most enduring supply, although its ore is not nearly so rich as the American.

Years of painful lessons may be, and probably are, before the people of Britain, but the discipline will be salutary, leading to their improvement and elevation, and hence to make life here truly happier because freer from degrading tastes than ever before.

The evils of poverty receive unceasing recital, but there are evils of long-continued prosperity of no mean order which pass without the attention their poison warrants. The decay of great States is traced, not to poverty and want, but to the reign of luxury and the vices it breeds. A Britain filled with people possessed of the valuable qualities of our race, and becoming as temperate and industrious as the French, German or American, has nothing to fear in the struggle for maintenance of a place among industrial nations. She needs no sympathy since her destiny is in her own hands. Fortunate, indeed, may be the verdict of her future historian, if sheer necessity at this epoch in her history compelled her to discard the vices engendered by a long season of extravagant gains, and consequent spread of the evils which luxury brings in its train, and led her once again to tread the toilsome path of self-improvement. A nation's position often depends upon the character and attainments of the leaders it produces—the exceptional men who lift their fellows. May it be the part of the historian to record that in inaugurating, and by example, precept and exhortation, conducting, this great campaign for the improvement of the habits of the people, rich and poor, noble and commoner, rulers and ruled, there was one body of men distinguished above all others for the enthusiasm, labor, althly and sacrifice displayed in every part of the field—the students, graduates and alumni of Scotland's oldest university.

To summarize in one paragraph the laws bearing upon the material position of nations, as described, may not be amiss:

(1) The chief nations of the world have greater capacity to supply their own wants than was supposed.

(2) Skilled labor has lost its power to attract capital and raw materials, which under favorable conditions now attract capital and labor.

(3) Nations will develop their own resources to the greatest possible extent as a patriotic duty, offering inducements to the enterprising to risk time and capital in the task.

(4) The country with the largest and most profitable home market has an invincible

weapon for the conquest of foreign markets, as the "law of surplus" operates in favor of the largest producer in competing for the trade of the world.

(5) As nations are more and more to supply their own wants, home commerce is to increase much more rapidly than foreign commerce.

(6) Nations tend to increase in population according to their capacity to produce cheap food.

The tendency to enlarge areas under one government must continue, otherwise the small nations become mere pygmies industrially and play no part in world-wide affairs.

These laws have already given some proofs of their sway, to which I beg to direct your attention.

We hear of huge industrial combinations on land and sea, but the combination of forty-five States, some of them larger than the United Kingdom, forming the American Union, which promises soon to equal Europe in the production of many of the staple articles, and is already producing more than the rest of the world of the article of prime importance, is a portent of infinitely more consequence to the world than any possible industrial combinations, the latter being trifling in comparison. At the present rate of progress America will, in the lifetime of many present, have a population equal to that of Europe today, excluding Russia.

The influence of a united Continent upon the separate smaller nations of the world is already felt. Europe sees its art treasures and its shipping lines and the centre of finance passing to the new land as primacy in manufacturing, in wealth and in commerce have already done, under the law of gravitation, which operates in every field, even in that of literature. Eight copies of the *Encyclopædia Britannica* find their home in the new land for every one in the old land of publication. The manufacturers of the new land invade the old and compete in the world's markets. These facts have not escaped the attention of the nations. Austria's Premier was among the first to direct attention to the situation, and he has been followed by others in authority. Europe is alarmed at the threatened consequences, and the search is now directed to the discovery of countervailing forces. The first necessary step in this task is to compare the two continents and note the points of difference which create the dangers feared. We

have treated of the positions of different nations hitherto; now we must contrast Europe and America as units—continent against continent.

There are some portentous contrasts.

First, we find Europe an armed camp, every man's time and labor for years taken for military training, not merely unproductive labor, but labor costly to the State. Nearly 9,000,000 of men are thus called to military duty. The American Union, on the other hand, has only an army of 66,000 men, and there is no conscription. Its men are in the industrial, not in the military army, constantly adding to the material wealth of the country. She is further enriched through the operation of conscription in Europe.

Europe has 410 battleships, cruisers and coast defense ships; America, 35.

It would be difficult to overestimate the effect of this contrast upon the industrial development of the two continents.

Second, America is one united whole at peace with itself, and enjoys immunity from attack by neighbors, or even by Europe, since she supplies so many parts of it with necessary food products that non-exportation of American products would produce not only famine prices, but actual famine itself, and compel peace. Hence industrial development has one indispensable condition—peaceful security. In Europe this is lacking, for it is divided into hostile camps. That its huge armaments cannot go on unceasingly growing is evident—an explosion must come. That this is considered imminent is evident from the measures taken by the nations to protect themselves from its consequences. If rulers and statesmen did not see the inevitable result impending over their heads—a Damocles sword—they would strain less violently in preparation. It is impossible for industrial development to proceed satisfactorily under the shadow of this dreaded catastrophe. There is nothing so timid as capital.

Until these contrasts cease, anything approaching equality of power between the industrial armies of the old and the new worlds is unattainable.

Third, since his continent has less than thirty people per square mile, the American has a constantly expanding home demand, urging him to extensions, and justifying costly improvements and the adoption of new processes. He has also a continent under one

government. He establishes his several works at the centres of the various markets. If a needed ingredient be found in one State, another somewhere else, if it be desirable to construct works for one part of a process here, or there, or ply ships, or build railroads in any part of this broad area, he proceeds without hesitation, dreading neither interference with supplies, hostile legislation, nor national antipathies. “No pent-up Utica contracts his powers”; more the boundless continent is his, as are all its markets, free from tariff. His operations are free from start to finish.

The result is that every process of manufacture in the Union flows naturally to the localities best adapted for it, there being no barriers to free selection. The best places also are selected for assembling materials, raw or partially prepared, for their final forms. In short, it is free, unrestricted trade in everything under the same conditions, same laws, same flag, and free markets everywhere over an expanding continent—advantages which only those experienced in industrial trade will estimate at their full value.

The European manufacturer finds obstacles to such varied expansion in a continent divided into hostile and warring States, with different laws and exactions and tariffs at every boundary, the fear of war overhanging all. He is almost compelled to confine his investments and works to the small area of his own country and its small home market.

One of many telling advantages which industrialism receives from political union in America is that a great home demand for any article from one united people occupying a continent evolves standard forms, the evolution of the best types, which justifies the manufacturer in erecting special machinery and running it exclusively upon each part of the type. Railway, electric, harbor, bridge—engineers in these and other branches adopt the standard forms: hence whenever a huge bridge, for instance, is needed promptly in any part of the world—Egypt or India—America is applied to: the steel-maker has his bridge construction and bridge erection departments managed by specialists who know what is best much better than any general engineer can possibly do. The proper plans for the standard bridge required are taken and the work begins instantly. Note here that the steel-maker is also the bridge contractor: a vital point. The bridge is proba-

bly open for traffic before the European engineer could have submitted plans and the bridgemaker had contracted with the steel-maker. A new bridge in Europe is a new creation in which several separate contractors have participated; in America it is from standard patterns evolved from experience and completed from start to finish by one contractor.

In greater or less degree this exists in the manufacture of the principal articles of which America is now the greatest producer. Consider agricultural machinery. One of the leading English manufacturers once told me that he had been compelled to abandon foreign markets and finally to cease business. The American manufacturer had triumphed. While here three or four hundred machines were sufficient for the season's demand, his friend in America put in hand seven thousand. Megalomania again. This output justified the automatic machinery used in every process of manufacture. If my memory be correct, it was twenty-two men in Britain for two men in America in one of these processes—that is, the machinery did twenty men's work. Why, then, not adopt it in Britain? you say. Small home demand is the adequate reply, and that demand itself open to the American competitor.

Here is an illustration of different character. The republic has now more than ten thousand miles of connected river and lake navigation which supplies the cheapest inland transportation of materials in the world. Having one government, these lakes and rivers were easily improved and joined, harbors deepened, and rivers rendered navigable by means of movable dams and locks. The work still goes steadily on under government naval and military engineers. Some years £12,000,000 have been devoted to it. In one day recently 226 barges, containing 200,000 tons of coal, passed through the Ohio River lock at Pittsburgh for Western and Southern cities. All articles can be thus floated or towed to points three and even four thousand miles distant for a few shillings per ton.

The iron-stone from Lake Superior mines is transported over part of this water system to the coal of Pennsylvania for nine hundred miles at a cost of two shillings per ton—one of several elements in the making of cheap steel. So much for water transportation through the action of government; now con-

sider land transportation by railroad through private agency. There is free trade in railroad building—five men in Pennsylvania, for instance, can meet and organize a company under the general railroad law by satisfying the county court that it is a bona fide enterprise, and that the capital is subscribed and one-tenth paid in: a charter issues costing eight shillings, and the work begins. Railway traffic rates per mile do not average over one-half, sometimes one-third those of Europe for long distances—often for three thousand miles merchandise is carried by rail in bulk, without transfer, at rates that would surprise you.

Pause to consider for a moment what such facilities by land and water mean as bearing upon the area of the home market which the gigantic producer of any article can reach and supply—and then carefully note how impossible to acquire these except through the action of one central government, disregardful of the rival claims of its petty parts, and dealing with the problem solely from the national point of view, always intent upon developing one unbroken system of transportation.

Let us go to Germany for another proof that magnitude tells. She is supreme in speed upon the Atlantic: no steamships like hers. And why? Because these monster ships start from Germany after draining the passenger travel of Northern and Eastern Europe. Not content with this, they touch at Southampton and compete for British travel, and still unsatisfied cross to Cherbourg and drain France and Southern Europe. On their homeward trips from New York they are filled with passengers for all these ports. It is not subsidies which enable the Germans to conquer here, for their lines are not paid more than half what British lines on the Atlantic receive. It is magnitude. The 250,000,000 people the German lines serve is equivalent to a great home demand. This justifies their ocean greyhounds as the American home market justifies unequalled manufacturing establishments. Since these lines were penned strong proof has come of the law of surplus. The Britain, the smaller market, has been compelled to pay \$150,000 per year for two Atlantic greyhounds, while the greater market, Germany, has four of these supported by the greater demand of the greater market.

Germany, in herself, furnishes proof of the necessity in this age for consolidation of small

areas. As long as she was cut up into petty divisions, with different laws and tariffs, she had no international position industrially—it was impossible she could have. United into one empire, with free trade over the whole area, giving a home market of 56,000,000 people, she only needed to encourage the development of her resources, which was wise statesmanship, to become the dangerous rival of Britain, and even to outstrip her in the most important article of all, steel.

One more illustration. Switzerland was the land of watch manufacture by hand. America introduced machinery, having an enormous home demand—there being scarcely an American adult without a watch. Now one concern there makes more watches than all of Switzerland, as one American constructor makes more locomotives than any European country, and one agricultural implement maker makes more machines than all Britain.

Another proof of the value of home demand can be given from Britain. One important department in Europe is unequaled by the American—shipbuilding, which also obeys the law of great home demand. Since Britain has been the great exporter and importer of the world and the greatest naval power, naturally the building of ships has taken firm root there; and in the world's market she remains supreme. Having the enormous home demand, she conquers the foreign.

More and more clearly must the truth be realized that the industrial struggle among the nations is bound up with the political, the question of magnitude being at the bottom of supremacy in both. A nation cannot be small in size and in population and remain great in material products or material power. To maintain first rank industrially, commercially or financially small nations must merge with others and become prosperous parts of one great federated power. Once the race was between separate nations, henceforth it is between continents.

Ask yourself this question. If America had been composed of petty, independent, jealous States, as Europe is, each afraid of the other, and armed to the teeth against expected attack, and had erected tariff barriers against the products of each other, would Europe ever have heard of the American Industrial Invasion? To ask the question is to answer it—never.

The deepest and most powerful of all con-

trasts between the two is that the one continent is one harmonious, peaceful, coöperative whole, its power and energy directed to industrial progress; the other divided into hostile camps—the power and energy of each directed to military protection and commercial isolation.

Ask yourselves another question. Can Europe, as long as she remains divided into hostile camps, ever hope to conquer foreign markets or even to repel the American invasion? That question also answers itself—never.

Such are the chief contrasts between the two Continents and their effects bearing upon Industrialism. What must Europe do to dispel them? There is only one answer. She labors in vain until she secures some form of political and industrial union and becomes one united whole, as the American Union is in these respects, for this is the only foundation upon which she can ever contend successfully against America for the trade of the world, or each of her separate nations hold its own home trade in manufactures, except under a system of protection which must handicap her in the race for the trade of the world. The load of militarism would cease to press upon her, for a very small percentage of the cost of the present defensive armaments of the Powers would suffice to protect her from foreign attack. Europe is a body whose members war against each other; her enemies those of her own household. A sorry spectacle.

The consolidation of Europe has proceeded apace within a century. Napoleon abolished more than a hundred independent centres of quarrel in Germany alone. In our own day we have seen Germany emerge, through Federation, into one of the strongest of powers and reach the front rank industrially, Italy reconstructed and enlarged, France adding Savoy and Nice. Several smaller changes in territory have taken place, but no student of international affairs assumes that Europe has yet reached its final forms. It is still in a state of flux. Hence the great Powers sleep upon their arms, mistrustful of each other, and in every successive budget devote huge sums to increase their war power, thus from year to year giving that fearful note of preparation which keeps capital alarmed and prevents rapid and thorough scientific industrial development and free exchange. No end can

be safely predicted to the struggle once begun. Twenty wars and peaces may find Europe still in flux, if its final forms are to be determined by the sword. Fortunately consolidations have reduced the centres of disturbance until today there are only five in Europe, and, as a result, even Europeans are now sometimes permitted to rest from the slaughter of each other for a generation, guiltless of their neighbor's blood, and this although Europe is an armed camp and the Powers still busy increasing their destructive agencies. We should hail the Triple and the Dual Alliances, since these are defensive agreements, and reduce war-making centres practically to two, a contest between which would be of such stupendous magnitude as to give the most reckless gamester pause. But the merely negative influence of these alliances is clear. They cause not one moment's cessation in the race for additional armaments—proof that the Powers still fear each other in spite of these consolidated agreements, and dread the coming of an inevitable struggle, which is to end only when the map of Europe is greatly changed. Hence the military army exacts its conscripts from the industrial army, and progress halts in all the fields of peaceful development. Security is absent. Some have predicted that no permanent peace is possible until the division among the great Powers be effected substantially upon racial lines. Such drastic reconstruction means generations of strife, or of preparation for strife, almost equally disastrous to industrial progress, and would still leave three rival Powers. Such a solution should not be thought of. One exclaims instinctively, "Take away the sword—States may be saved without it." The most important gain of all to the cause of peace among men is to be credited to the enlightened and peace-loving Emperor of Russia. The Hague Conference, called by him, established a permanent tribunal composed of the ablest and best men of the various nations, a selection from which can be made by nations to settle their differences.

Its value has not been realized. Wars in South Africa and the Philippines arose and absorbed attention. In both of these our race was offered by its adversaries arbitration through this agency, which was ultimately rejected, but the time comes when we shall begin to appreciate what the world has gained thereby. Two international disputes have

already been submitted to this high court of humanity, and the example once set is bound to be followed and crystallized into custom. A thousand years from now the historian will probably cite as the most important event of the century the first creation of a tribunal whose object was to banish from the earth its deepest stain, and from human beings their most inhuman practice, the settlement of international differences by the killing of each other. Such the part played by the present Emperor of Russia. Such his unimpeachable title to rank with the few supreme benefactors of men. It is something gained that Europe might relieve itself of internal wars among its parts, as if by magic, by simply agreeing to appeal to this tribunal.

The three leading powers, Russia, France and Germany, took joint action in regard to a question in the far East, and more recently Britain joined them in joint action in China, the United States coöperating to some extent. These are all cheering signs, indications that perhaps the era of continuous joint action is not so far distant as might be feared. The Triple and Dual Alliances, or a new grouping of parties, might guarantee the *status quo* and agree to cease increase of armaments, which would not change the relative positions of nations. Perhaps a second resolve might soon follow that these should be ratably decreased, but this being a positive, not a negative measure, would be more difficult. Still, much seems possible in the direction of peace, since there are now only two organizations to be harmonized.

"A great man has arisen in England, Sire, called Cromwell," said Richelieu to the King. We might say "A great man has arisen in Germany, the Emperor." It is impossible to follow his doings without feeling that here is a personality, a power potent for good or evil, in the world. So far he has given Germany a much-needed stimulus to industrial action. Both on sea and land his influence has been decisive. The German ships are first in speed upon the Atlantic. The inland watercourses of Germany, according to his plans, are soon to play a more important part in her internal development. She is now second in the world as a manufacturer of steel, which means much, since that is the basic element of a thousand articles, and her product of iron is soon also to be second. The Emperor's head and hand and heart, too, are in all these triumphs. He is at

once the Emperor and the vital force of the empire. One wonders whether, after having proved the efficiency of the German Constitution, he may not devote himself to its further extension. All that Germany has gained by consolidation into an empire Europe would gain, and more, if merged into one. A combination of the German and American Constitutions, satisfactory to most, if not all, European nations, seems not impracticable, and the union only of the most important is required to insure peace. France, Germany and Russia would suffice, and these have taken joint action already against Japan. Why are they not to do so hereafter in the greater issue? Under both the German and American systems small nationalities are sacredly preserved as in the Union of Scotland and England; hence the perfect welds. The Kings of Saxony and of Bavaria are German. Every State in the American Union is in itself sovereign with its elected Governor. Wherever suppression has been tried trouble has arisen. Imagine the effect of an attempt to destroy Scotland's nationality and stamp out the sentiment which lies in the core of every Scottish heart, which no words can ever express but “Scotland forever.” With this precious national patriotic sentiment properly recognized and protected, consolidations of nations will be easy and wholly advantageous.

The coming century is to look back upon the present petty political divisions of Europe with the feelings we of today entertain for the one hundred and fourteen little States of Germany and their pygmy monarchs of the past century, with their thirty-four tariff barriers to commerce and travel on the Rhine, resembling the Likin of China.

The Emperor of Russia having taken the first step toward the peace of the world in the Hague Conference, the other mighty Emperor might some day be impressed by the thought that it is due to himself and to Germany to play a great part upon the wider stage of Europe as her deliverer from the incubus which oppresses and weakens her, the appalling and paralyzing fear of a war of ruin between the members of her own body. Seldom comes to the world one who is both Emperor and ruler, and the few known to history have made their mark upon the world, from Cæsar and King Alfred to Charlemagne. No ordinary task contented them. One cannot help believing that “one of the

supremely great” in the Emperor's position could influence the few men who today control Europe to take the first step, not to federate, but by alliance to insure internal peace, which is all that can be expected at present. What the separate nations of Europe—Russia excepted—have to look forward to in the not distant future, if they do not agree so far as to enjoy peaceful security and free trade among themselves, and act in wars, military or industrial, as one power, is to revolve like so many Lilliputians around this giant Gulliver, the American Union, soon to embrace two hundred millions of people of the English-speaking race, capable of supplying most of the world's wants, both in manufactures and food products, at lowest and yet to it profitable prices. The most sanguine predictions in regard to her advantages and coming triumphs industrially and commercially are, in my calm judgment, probably to be exceeded. Even if European nations were reconciled to play the subordinate rôle indicated, there remains the impossibility of their enduring forever the present military strain under which some already begin to stagger. The loan must sooner or later prove too great and force reconstruction.

Let us therefore assume that Continental Europe will be finally compelled, after greater or less sacrifice, through ruinous wars or peaceful negotiations, if not to federalize in some form, yet to adopt means to insure peace among themselves which would lead to some form of federation under free trade. It would then be continent against continent—Europe *versus* America: with the former relieved from militarism there would be equality so far and both could prosper with a large home market and participate in the ever-increasing trade of the world. There is little room today for operations upon a small scale either in industrialism or in nationalism—nation against nation was once well enough. Britain and France, Italy, Germany, Austria-Hungary were each once of sufficient size to rank as great powers, but the American Continental Union—forty-five States in one, has changed all that. The solid mass of this great body in action will by mere momentum force its way through small industrial warring units into opposition. There is also huge Russia to be reckoned with, which likewise threatens to overshadow the small nations.

The closing paragraph of Morley's “Life of

Cobden" is most pertinent to today's conditions:

"Great economic and social forces flow with a tidal sweep over communities that are only half conscious of that which is befalling them. Wise statesmen are those who foresee what time is thus bringing, and endeavor to shape institutions and to mold men's thought and purpose in accordance with the change that is silently surrounding them."

The question arises, what would Britain do if Continental Europe be thus relieved from internal dangers and under free trade possessed of the indispensable home market, and were finally to be federated into one Zollverein or great power? Would she remain a small separate island nation of forty-five or fifty millions, against the hundreds of millions of the Continent? Or, if invited, become a member of the European consolidation—our race submerged by Slav, Teutonic and Latin races? Or would the mother-heart, beating fast within her, turn her gaze longingly to her children across the sea, then hundreds of millions strong, and, grasping their outstretched hand, murmur, "Whithersoever thou goest I go; thy people are *my* people": the English-speaking race thus becoming again as it was before—for offense never, for defense ever—one and inseparable.

It is for essays upon this momentous question that I shall offer the usual Rector's prizes.

Students of St. Andrews:—My subject has been the Industrial Ascendency of the World, once yours, and now passed to your lineal descendant, who bears the industrial crown. But, gentlemen, in this audience, assembled in Scotland's oldest university, the thought that fills your heart and appeals to mine, is, of what value is material compared with moral and intellectual ascendency, supremacy not in the things of the body but in those of the spirit! What the barbarous triumphs of the sword compared with those of the pen! Peace hath her victories much more renowned than those of war: the heroes of the past have been those who most successfully injured or slew; the heroes of the future are to be those who most wisely benefit or save their fellow-men. What the action of the thews and sinews against that of the Godlike reason, the murdering savage armies of brutal force against the peaceful armies of Literature,

Poetry, Art, Science, Law, Government, Medicine, and all the agencies which refine and civilize man and help him onward and upward! Shakespeare and Milton, Burns and Scott, Newton and Hume, Bacon and Locke, Cromwell, Hampden, Pym, Sidney and Russell, Burke, Gladstone, Bright, Tennyson, Browning, Arnold, Carlyle, Ruskin, Darwin, Watt, Symington, Stephenson, Bessemer, Arkwright, Hargreaves, and others of the past; and all the leaders of today who march in the train of the white-robed angel of peace and good-will among men.

What matters what part of the world makes the most steel, iron, cloth or ships, if you produce the highest poets, historians, philosophers, statesmen, inventors, teachers? Let others make more of the food for the body of man, if from you come the best books for his soul, or the highest examples of lives grandly lived. Let more of the millions of the people of the world be clothed by other lands and other hands, as long as you educate and apparel the minds, leading men in the higher paths.

There is no ascendency of the world and that the highest, where neither unbounded fertile territory, immense store of minerals, nor numbers, nor aught material, are of value, where megalomania reigneth not. For the crown of this realm you have no cause to struggle; it is already yours; it has never been lost; it remains here in the old home. Nor has the blast yet blown of any challenger from either of the four winds of heaven. The crown of the material world physical reasons prevent you wearing, although man for man you may remain the equal or superior of any. There is no reason why you should lose the other. See to it that you do your best to guard it against all comers, men of St. Andrews, for precious it is beyond all others, and blessed among and beyond all other nations is she whose brow it adorns.

Let other nations therefore distribute among themselves as they may the victories of materialism. Precedence for Britain, the dear old home of our race, is the thing of the spirit, the modern Greece, and more than Greece ever was to her world, at whose shrine all that highest and best of the nations of the world will dutifully attend to testify their gratitude, admiration, reverence and love.



Photographed by J. C. Heument

EX-PRESIDENT GROVER CLEVELAND

AS HE APPEARED AT THE PRINCETON INAUGURATION

"On this issue [tariff reform] I am satisfied that the Democracy is face to face with a great opportunity. All the signs of the times point to a recognition, far beyond all party lines, of the benefits which would accrue to the people by a readjustment of the tariff, and it would be worse than folly for the party, under the stress of any temptation or yielding to any allurements, to permit this to be subordinated to or overshadowed by any other issue."—*Grover Cleveland.*

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The March of Events

AS the end of the year draws nigh we may congratulate ourselves that it will leave the world in much better plight than it found it. When it began there was war in South Africa and there were troublesome hostilities in the Philippines. Now peace is broken, if broken at all, only by the unrest in Venezuela and Colombia and in Hayti that follows their revolutions and in Africa where the "Mad Mullah" has attacked the British. And not only is the world at peace, but the great nations are more securely linked together, perhaps, than they ever were before. New forces for peace are at work—especially two of the strongest possible world influences: an organized and closely knit commerce, which none can afford to disturb for fear of a lasting loss of trade, and in particular the overwhelming commercial power of the United States, which would gain a still surer lead by the suspension of industrial activity in any important country. The little periodical adjustments of power and of privilege that the nations used to make by special treaties were crude and weak guarantees of peace in comparison with the compelling power of modern commerce and all that it implies. The most recent wars were really only frontier wars.

Men without historical knowledge easily believe that their own era is a new era in the world. But men with historical knowledge now see international conditions that are

radically different and radically better for peace than any of the battered centuries behind us knew. The unfettering of the dominant race of men by free institutions to free opportunity on the most fruitful continent and the industrial rise of the Republic, fortifying its political power, have put all nations in a new relation to one another and in a new relation to civilization. This revolutionary fact has become plainer this year than it ever was before. Its far-reaching significance we do not yet see; but it looks like a great force that will work for the steadying of governments and for the sane direction of endeavor for centuries to come. For it is the natural result of a great law of human development and not an advantage won by the strength of armies or by the skill of diplomatists or by any other power that may change with a change of rulers and of generations. The industrial man becomes stronger, the political man weaker; and economic force is beginning to rule the world as military force once ruled it.

A YEAR THAT HAS BROUGHT A WIDER OUTLOOK

SOME of the definite proofs that have been given this twelvemonth of the nations' adjustment to a future larger and humaner than the past are worth recalling. The Boer war ended with the promise of a more liberal reconstruction of South Africa than England has been accustomed to make

to a subjugated people. That this liberality was wrung from the conquerors by the unexpected endurance of the Boers may be true. But it fits in not only with the English policy of our time but with the humaner mood of the world. An even greater departure from preceding methods of colonial warfare and administration has been made by our dealing with the peoples of the Philippine Islands. Cuba set up her own government in due time, and now that the sluggish politicians of that young republic know the conscience of the people the details of our honorable programme will unquestionably be carried out.

Between the great powers there has been no serious friction. England concluded a five-year treaty with Japan that makes peace in Asia more stable. Our own diplomatic triumphs for fair dealing have continued under Mr. Hay's management, for no other international statesman is writing so large a chapter of contemporaneous history. Germany sent a royal prince to express her good will to us. The change of Prime Ministers of England did not break the continuity of policy, and under the king the great empire is as stable and as sane as it was under the great queen. The Australasian colonies have economic and administrative difficulties, and there is some danger of local disturbance elsewhere in the empire, nor did the conference of colonial ministers bring concrete results; but England's power is held in bonds for peace everywhere by the need of her industrial awakening; and it is interesting to reflect that the subject that now profoundly agitates the kingdom is popular education. It was to the broader education of men into an international view of life that the most successful of modern English adventurers gave his thought when he made his will, and it is to education that the builders of colossal American fortunes give with a lavishness that marks a new era.

The year would be made memorable, if it had no other claim to distinction, by the demonstration that the Hague arbitration tribunal may settle international contentions. The submission to it of the long-standing case of the "Pious fund" by the United States and Mexico does not prove that in the future all or many international disputes may be settled by it, but it has definitely and auspiciously made an excellent beginning of beneficent activity.

TWO NOTEWORTHY CHANGES IN PUBLIC THOUGHT

AT home the year so far has been noteworthy in the best way that a year can distinguish itself—by the continuation of a generally diffused prosperity. If the foolish coal strike could have been left out of the calendar, it might have been said that our chief excitement has been caused by the very excess and ambition of prosperity; for we have probably talked more about trusts, domestic and international, than about any other single subject. Mr. Morgan has held the centre of the stage more constantly and more conspicuously than any other one private citizen, and yet he is one of the most reticent of men.

It is in prosperous times that the normal organization of industry goes on; for in such times men are energetic and hopeful and ready to bring things to pass. In a sense, therefore, continued organization is a wholesome sign—up to the limit of normal action; for there is a point beyond which it becomes the mere taking of a mortgage on the future. Then—if the future does not yield the big returns on its capitalization—a day of reckoning will come. It will come sharply, too.

No man will dare predict early disaster in specific terms; for no such prediction is warranted from facts that are now obvious. But every thoughtful man knows that Attorney-General Knox spoke the truth when he said that the chief evil of trusts is their overcapitalization. In this era of almost incalculable prosperity there has been an irresistible tendency to overcapitalization—to capitalization on the basis of the earnings of an exceptionally prosperous time.

But there has been an enormous gain during the year from the popular discussion of trusts and trade. Public opinion has asserted its growing determination to protect the public interest, but it has asserted this determination less in a wish to make indiscriminate attacks on trusts than to deal with them in a just and conservative way. The trust-smasher is less in evidence, and the trust-regulator is more. The literature of the subject that has most commended itself is such treatises as the President's more conservative speeches, the Attorney-General's address at Pittsburg, Prof. James B. Clark's little book on the regulation of trusts, and other such arguments and appeals for the strengthening of conservative laws against monopoly and in



FRANK NORRIS
DIED OCTOBER 25, 1902.

Photographed by Frederic Colburn Clarke



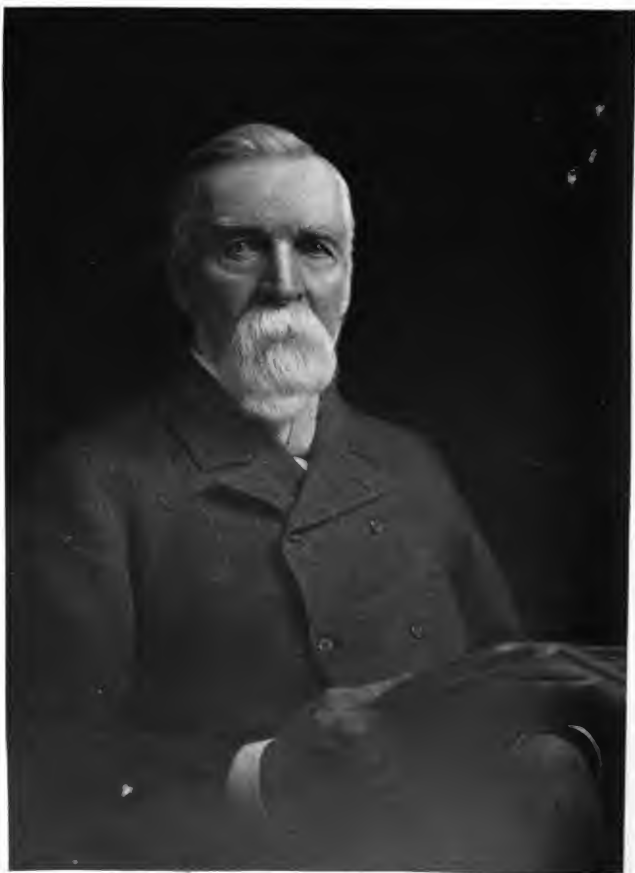
ELEANORA DUSE

THE GREAT ITALIAN ACTRESS NOW PLAYING IN THIS COUNTRY



DR. EDMUND J. JAMES
THE NEW PRESIDENT OF NORTHWESTERN UNIVERSITY

Photographed by Fowles.



MR. JOHN FRITZ, IRONMASTER

"John Fritz is a living proof of the results of individual and industrial liberty in a country endowed with boundless resources. In vain shall we seek for a like career in nations or in countries where the individual initiative has been suppressed. He is an example of the free spirit of American institutions, a beacon light warning the present and coming generations against permitting any invasion of the principle of the liberty of the citizen, which alone has made our beloved country great and free."—*Abram S. Hewitt.*

the encouragement of publicity and for permitting the common law to work its restraining and regulating influence according to the great principles that it embodies.

Then, too, a strong impetus has been given by the discussion of the trusts to the reduction of the tariff, not only on trust-made articles but on many more. The rising tide of opinion in favor of tariff reform must be put down as one of the notable movements of the year. It did not make itself felt in the election because of bad leadership; but the steady growth of opinion has gone on. It is the one active subject in our political thought to which the serious-minded public man will give his most earnest attention. Most other subjects are artificial or temporary. This has a staying power and it will not be talked down. The day of action, however, is yet at some distance in the future, because of the very great personal popularity of Mr. Roosevelt and of the pitiful lack of Democratic leadership.

The two most important changes, then, that have taken place in the public thought and purpose during the year are the steady growth of a determination to regulate trusts by conservative methods, for the public mind has swung away from a mere destructive mood, and the increasing earnestness about a reform of the tariff, when the time for action comes.

MR. VANDERLIP'S CONSERVATIVE WARNING

THE very fact that prosperity does continue is putting far-sighted men in a thoughtful mood; for radical financial changes are taking place as the result of the revel of organization that we have been indulging in. When organization is so effected or effected so far as to cause a general inflation of values or of credit, a day of reckoning must come—unless a return to conservative action be taken in time to prevent it.

Mr. Vanderlip, formerly Assistant-Secretary of the Treasury, who is a student of Old World financial conditions as well as of our own, has given what he called a conservative note of warning that comes with great timeliness. He has pointed out that there has been an increase of \$1,300,000,000 in the deposits of the national banks alone during the last two years, while the basis of gold and legal tender has slightly decreased. This increase of bank liabilities and of bank credits has been

caused in great measure by the conversion of the ownership of industrial establishments into shares and bonds—that is, into bank collateral. With the banks doing a top-heavy business—their credits thus enormously extended—and with so much of the formerly liquid capital of the country now locked up and “fixed” in many forms of industry, there is great theoretical danger. And it would quickly become an actual danger if any untoward financial event of large importance were to happen. If the banks were forced by any shock to the general situation to call their loans, we should be in imminent danger of such a general and sudden curtailment of credit as would produce stagnation if not panic. The best time for conservative action is while it may prevent trouble. It is too late after trouble has come.

Mr. Vanderlip does not make a cry of alarm, but only of warning. He is a scientific and not a sensational student of financial conditions. But he did a distinct public service by his conservative explanation of danger. Every far-sighted man feels the truth and opportuneness of it.

THE NOVEMBER ELECTIONS

THE November elections very emphatically sustained the President and his party. The Republican majority in the House of Representatives was somewhat reduced; but at the mid-Presidential election the dominant party is at a disadvantage, and some Republican loss was expected. The gains of the Democrats were not large enough to show that they are regaining unity of purpose, nor to indicate that any great tide of public feeling is yet running in their favor. The two Democratic strongholds are New York City and the Solid South.

The most noteworthy local result was the increased Democratic vote in New York City. All factions of the party there are again united. Tammany showed its full strength. Its huge machine is in good voting order in spite of the troubles of boss-slip that have come since Boss Croker nominally resigned. The machine is greater than any boss, and it showed a compactness of its followers that looks dangerous for the reform party when the next local election comes.

The result of the November elections throws no new light on the next presidential contest.

Mr. Roosevelt remains in the centre of the Republican stage. The Congressional election signified the country's hearty approval of his administration. No Democrat won new distinction or prominence such as to suggest his nomination for the presidency. Mr. Coler polled a very large vote in New York, but he was defeated, and at best he is hardly made of presidential material even in times when few men are wholly safe from accidental nomination; and Mr. Hill is where he was before—except that he is additionally hampered now by his platform in favor of the government ownership of coal mines. The next presidential contest will be between Mr. Roosevelt and a yet unknown Democrat, with the chances more strongly in Mr. Roosevelt's favor than they have seemed in favor of any man in our recent history two years before the election. The one thing he has most to fear is not any particular Democratic candidate now within sight, but his possible running-mate known by the name of Hard Times. Whenever *he* comes into the field, the present political contentment and apathy will be rudely disturbed.

A NEW CHAPTER IN SOUTHERN POLITICS

THE movement begun a few months ago in North Carolina to exclude Negroes from Republican meetings spread to several other Southern States almost instantaneously. Neither party in the South wants a solid mass of Negro followers, for with such a mass it cannot get the support—certainly not on local questions—of any considerable number of influential whites. There is nothing left for the Negroes to do but to refrain from political activity or to make a political party of their own. Such of them as are not disfranchised may vote; but if the white Republican party succeed they will not have representation even in conventions.

The aim of the new movement is, of course, to split the solid white Democratic ranks; and in several States, notably in North Carolina, men of prominence who have hitherto been Democrats have come into the new party. It is thought that the new party will receive the support of many such if it succeed in establishing itself.

The most serious difficulty that it encounters is the necessary opposition of the National Republican party and of the Republican administration. No National Repub-

lican convention could give seats to delegates who came from organizations that openly excluded men wholly because of their color—provided there were contesting delegates from other organizations that made no such discrimination. Nor could any Republican administration lend its approval. Now, since the Republican party in most of the Southern States has for this long generation lived chiefly on the loaves and fishes that come from these two sources (for it has been an abject and mendicant party), the question is, can the new organization really supersede the old? Will the undisfranchised Negroes and their leaders retire?

If they do retire or are so put in the background that the white Republican party in these States wins recognition by the National party, the solid white South will be divided. What will become then of the solid Negro South? Will it be divided, too? Or will it remain compact and hold the balance of power between Southern Democrats and Southern Republicans? Here lies the danger.

But, since the race feeling is stronger than party feeling, the probable outcome will be the successful establishment of the white Republican party in those States, whether few or many, where it has strong leaders. The practical retirement for a time of the Negro from political organization, and at last, whenever either white party needs the colored vote, a rivalry between them for it. The thing most to be feared is that this rivalry may tempt to corruption. But such a result need not follow. When the Negroes reappear in politics, as their disfranchisement is gradually overcome by their education and their thrift, they also may divide and some become members of one party and some of the other. If the political solidity of each race be thus broken Southern political life will enter a new era.

In the meantime, three facts have been made plain. The Negro is spurned by white men of both parties; there is a growing division of political opinion among the Southern whites; and the National Republican party has an embarrassing dilemma to face.

THE DEEP SERIOUSNESS OF LABOR UNIONS

THOUGHFUL men in the United States, whatever their relation to industrial life, are thinking more seriously about the problems presented by labor and its organiza-

tion than they have ever thought before. In proof of this increasing seriousness only the following facts, out of many such, need be set down:

I

Mr. Alfred Mosely has brought to the United States members of nearly every English trade—founders, carpenters, printers, plasterers, shipbuilders, cotton spinners, tailors, weavers and perhaps a dozen more—and they have been investigating, each in his own trade, the methods of work and employment here. The motive of this interesting practical study of American labor and of its ways is, of course, to discover how the American manufacturer turns out a greater volume of work per man than the English manufacturer. It has been made plain by a year's discussion on both sides of the Atlantic that the restriction of output by the English trades unions is one of the important causes of the lessened efficiency of the English working system as compared with the system in vogue in America.

Simultaneously with the coming of this party of English workmen, it has become obvious to every man who knows anything about the subject that there is a distinct tendency in some of our trades unions—notably in the building trades, but not in these only—to do precisely what the English trades unions have done. They limit the amount of work that a man or a group of men may do. They restrict output. They repress individual initiative and ambition. This is not yet true of all unions, but it is already true of some, and others show a tendency in this same direction.

II

Another phase of the same significant tendency is explained in the following statement of the owner of a shop, whose output is products of iron and steel: "My shop is a union shop. I have no trouble with the union. But I have proved to my own satisfaction that it makes men less efficient workmen, that it prevents the development and the rise of the best men, and that it prevents the normal growth of my business. In short it hinders industry. I have proved this by a long and minute comparison of my shop with a similar shop that is non-union and that pays its men by the piece. In the other shop

the men make higher wages—the best men very much higher. The shop, too, gets a larger return for the wages it pays, because the work is better. The men are of a higher average than my men. They are better workmen; they are more successful; they are more ambitious; they are better citizens. I do not now turn my shop into a non-union one because I should have a strike on my hands and all sorts of trouble, and my business would be seriously interrupted at a prosperous time. I simply can't afford to do it now. Many of my men feel as I do. They would like to break away from the union. But their trade is well organized. There are not many non-union shops. They do not dare quit the union. But the best of them feel repressed by it."

III

A step to make the labor unions more serviceable is under discussion in Massachusetts. A bill will be introduced at this winter's session of the Legislature to require the incorporation of them. Massachusetts has an elaborate and rigid corporation law. The proposal now is to bring labor unions under the same sort of responsibility that corporations must assume, so that they may sue and be sued, and so that they will be, as other corporations are, within reach of the courts for their actions.

One union at least—perhaps there are more—has for some time been incorporated; and the compulsory incorporation of them has many times been discussed. The friends of this definite movement in Massachusetts expect that such a requirement will make them more useful. It is an effort to help the laborer by lifting the union into responsibility. It is the reverse of the destructive plan that the manufacturer just quoted would apply. He would abolish them if he could.

IV

The next significant fact is the recommendation by the Illinois State Federation of Labor that all members of labor unions who are also members of the State militia shall resign from the militia. This proposition has been favorably regarded by some other labor organizations. It has done more than any other single recent declaration or action to cause a public distrust of such unions as favor it. It hints of a class separation that in turn hints of anarchy.

V

Mr. Abram S. Hewitt, who favors the organization of labor, wrote a letter that was read at the recent celebration of the eightieth birthday of Mr. John Fritz, the eminent iron and steel maker, which admirably expresses the fear that the unions are in danger of preventing the development of exceptional men. Mr. Fritz, who, by his inventions and improvements of processes, has conferred an inestimable benefit on mankind, rose from the working ranks. Mr. Hewitt wrote:

"That a boy born in humble life, with no advantages of education or opportunities for position, without influential friends or the favoring accidents of fortune, should be able to advance steadily in usefulness, power and the respect of his fellow men, until by common consent he occupies the first place in the domain of practical industry with which he has been connected, gives conclusive evidence that political institutions which afford free play to individual ambition, industry, ability and strict integrity are worthy of all loyalty and should be cherished and preserved at all costs and hazards.

"The developments of the twentieth century show that these institutions are in great peril. Their essence is to be found in individual liberty, involving the right of free labor and the acquisition of private property under lawful conditions. When the right of free action shall be suppressed the possibility of a career like that of John Fritz will be destroyed. Collectivism, ending in Socialism, may afford other advantages, but let it not be overlooked that these advantages will be obtained only by the sacrifice of personal freedom, and will arrest the progress of civilization, due, during the ages that have passed, to the substitution of freedom for force.

"John Fritz is a living proof of the results of individual and industrial liberty in a country endowed with boundless resources. In vain shall we seek for a like career in nations or in countries where the individual initiative has been suppressed. The stagnation of China, whose men are physically strong and whose resources are abundant, is in marked contrast with our own land, where heretofore every citizen has been free to employ his labor and his energies in his own way, so long as the rights of others were respected.

"John Fritz, therefore, is to us more than a man whom we love and respect, more than a friend to whom we wish many years of health and happiness: he is an example of the free spirit of American institutions, a beacon light warning the present and coming generations against permitting any invasion of the principle of the liberty of the citizen, which alone has made our beloved country great and free."

VI

Finally, the grave fear that a conservative part of the community felt lest President Roosevelt had put the dignity of his great office in peril by having to do with the coal strike, and on the other hand the practically universal applause of the persistence and of the practical patriotism that caused him to succeed—these feelings have even more

deeply stirred the people than the coal strike itself did; for it was made obvious that a labor union and a small group of employers may hold the public in their grip as it had perhaps never been obvious before even during our most violent labor troubles. Here was a deadlock which had defied every influence but the personal effort of an energetic President of the United States; and he could break it only by what many regarded as a most strenuous and even dangerous use of his personal power as President.

There were three scenes in the adjustment of the coal strike that the public will not soon forget. The first was the straightforward and earnest appeal that President Roosevelt made to the operators and to the strikers to agree to arbitrate, and the almost insulting conduct of the operators. Some of the operators, indeed, showed a self-righteous pig-headedness that was enough to turn a right contention into a wrong one.

The next scene was the visit of the greater captain of industry, Mr. J. Pierpont Morgan, to the President, when in five minutes the President's request of the operators was agreed to.

The third scene was at the convention of the miners where the plan for arbitration was accepted. Men who were sure of reinstatement at the mines volunteered to give their places to others who might be debarred. A spirit of loyalty to their organization and to their leaders was shown that was admirable and true; and the meeting broke up singing patriotic songs. They had stood together for nearly half a year for what they regarded as a right contention—unselfishly, for it could at best bring any one of them little profit; and that is no small thing for any group of men to do. Out of such a spirit great achievements can come under able counsel and wise leadership.

All these things and more like them have put the whole people in a most serious mood regarding the rights, the duties and the dangers of labor organizations. In the uncertainties that beset the subject two things are plain:

Labor unions have come to stay. They will grow rather than diminish.

They call for the wisest guidance if they are really to build up the American workingman and not to destroy the great characteristic of

American citizenship while they are struggling merely to gain the strength of compact organization. Every great movement in a democracy must be tested at last by its influence on the individual. The care of classes is the business of older and less efficient social systems. The normal nurture and the free development of the individual is the mark of a democracy.

There is no more urgent demand for wise leadership in the world than the demand for wise leadership of organized American labor today.

THE PROBABLE PROGRAMME FOR TRUST REGULATION

IT is probable that the long and varied discussion of trusts will bear fruit in a definite effort at legislation during the short session of Congress; and the effort most likely to succeed will be in the general line of Attorney-General Knox's plan which he explained in his address to the Pittsburg Chamber of Commerce. This plan proceeds on the assumption that (without an amendment to the Constitution) Congress has power so to supplement the Sherman anti-trust law as to compel publicity and to prevent monopoly.

When the Sherman law was passed in 1890 it was supposed that it would give the Federal Government power, through its regulation of interstate commerce, to prevent the existence of trusts that monopolize articles of general consumption. But the Supreme Court by its interpretation of the law made it almost useless. It does not enable the Federal Government to interfere with a trust because it is a monopoly, but only with a trust that shall seek to monopolize or restrain interstate commerce—which is a very different thing. Attorney-General Knox declared that

"If the Sherman Act exhausts the power of Congress over monopolies, the American people find themselves hopelessly impotent, facing a situation fraught with the most alarming possibilities, with which neither the Federal nor State governments can deal."

But with the Sherman law so amended and extended as to give the Federal Government, through its regulation of foreign and interstate commerce, some real control over trusts that strive for a monopoly of production, all additional necessary power resides in the common law, and by the common law the courts can decide each case on its own merits—whether it really be in restraint of trade.

This plan is simple—at least, as simple as so complex a matter seems likely to be made. It calls for a single act of Congress which shall give the Federal Government the power that the Sherman law at the time of its enactment was supposed to give it. Then the common law will do the rest.

Such a programme does not exclude the reduction of duties on trust-made articles, which commends itself to many thoughtful men, but which is promiscuously punitive and would not touch the larger task of scientific regulation. It is well to remember the closing words of Mr. Knox's comprehensive address, which is the best piece of literature provoked by the whole summer's discussion:

"The conditions of our commercial life are the result in part of an evolution of forces of world-wide operation. They have developed gradually and are not, perhaps, fully understood. Laws regulating and controlling their operation, before they ripen into a complete system of wise jurisprudence, will be of gradual growth."

In other words, he who has in hand a complete or automatic remedy is a quack.

THE PEACE ARMY AND ITS FUTURE COMMANDER

THE promotion, which has been semi-officially announced, of Major-General S. B. M. Young to be lieutenant-general, to succeed Lieutenant-General Miles, who will reach the age of retirement next August, will put the command of the army into the hands of a soldier who has won every step in his military career from the ranks of the volunteer service, which he entered at the beginning of the Civil War. He became a captain of cavalry as early as 1861, and he took part, in spite of successive wounds, in most of the cavalry operations of the Army of the Potomac. He was brevetted brigadier-general of volunteers; but, when he was mustered out in 1865, he began military service again—this time, of course, as a regular with the rank of second-lieutenant. He was colonel of the Third United States Cavalry when the war with Spain was begun, and since then he has risen to his present rank. He saw service both in Cuba and in the Philippines, and he is now President of the War College.

The position of lieutenant-general in time of peace is not spectacular, but it is important if the right man holds it. General Young is in the heartiest agreement with the President and Secretary Root concerning the

reorganization of the army and the efficient organization of the peace force. The army is now, by the way, for the first time since 1898, on a peace footing. The number of officers and men is little less than 60,000—as nearly a “skeleton” as the army of so large a country can be and keep a really good organization.

It was only the other day—it is difficult now to recall it—that certain frightened persons of prominence were sure that we were committing ourselves to the maintenance of a permanently great army; that the rampant spirit of “militarism” had made peace seem abnormal; and that we should find fighting so pleasant (the savage blood running red even in our children) as to seek new lands to conquer, till Asia were laid waste and the Southern Cape acknowledged the Stars and Stripes; for to such dread “imperialism” were we drifting that there was no retreat, since we had tasted Spanish blood and grown remorselessly fond of Filipino slaughter! How gently a little time and silence bring us to ourselves after a nightmare of feverish criticism.

PREPARING FOR TWO GREAT PUBLIC WORKS

ENERGETIC preparatory labor has been done looking toward the beginning of two great public works authorized by Congress at its last session—the isthmian canal and government irrigation of our arid region. The Canal Act empowered the President to buy the rights, franchises, property, etc., of the French Panama Canal Company if they could be bought for \$40,000,000 and if the titles were clear. Attorney-General Knox himself went to Paris to examine the titles, and he has reported to the President his opinion and the opinion of the other counsel of the United States that they are clear and that the Panama Company has the right to sell all its interests on the isthmus. In the meantime the Colombian Government has threatened some delay in completing the negotiations; but it is not thought that any insuperable trouble will arise in that quarter. It has been given out that Rear-Admiral Walker will be appointed chairman of the commission that will have the completion of the canal in hand, and it is expected that the negotiations with the French company and with the Colombian Government will soon be concluded and that work will be begun during

the present administration—an event large enough to give historic distinction to any presidency.

Seven available sites for government irrigation reservoirs in Montana, Colorado, Arizona and Nevada have been reported to the Secretary of the Interior by Mr. Newell, the chief hydrographer of the Geological Survey. Thus preliminary work has been done also for this great undertaking.

A MODEL CHARTER AND A DEBAUCHED CITY

WHEN the present charter of St. Louis was framed in 1876, it was regarded by students of municipal administration as a model. Many of them declared that if the plan that it illustrated should be generally adopted we should soon be free of the reproach of bad municipal government. The State constitution of Missouri separated the city of St. Louis from St. Louis County, and gave the city, in addition to its municipal powers, the authority invested in the counties of the rest of the State. The city charter proceeded upon the theory that the great centres of population have conditions and needs unknown in the sparsely settled regions, and that the persons directly affected by these needs and conditions should have the sole power to legislate concerning them. Thus the city secured—not as a concession wrung or coaxed from the State government, but as a right—somewhat the same powers and independence in its own sphere with respect to the State government that the States have with respect to the federal authority.

This theory of municipal independence was not new, but it received a much broader application in this charter than had previously been given to it in any important city. St. Louis has had home rule to an extent not enjoyed by any other city in the United States. Its public officers were supposed to be nearer to the people than they were elsewhere. It was thought that provision was made to remedy inefficiency, to prevent extravagance and to detect and to punish wrongdoing. If any municipal system anywhere in the world could be relied on to work with some approach to automatic action, this system would.

But a government depends more upon the officials who administer it than upon those who frame it. The intelligent and respectable citizens of St. Louis came in

time to neglect their civic duties, to refuse to attend the primaries, and to permit incapable and corrupt men to get into office. The penalty is written large in the orgy of blackmail, bribery and robbery which has brought discredit and humiliation on the eve of a great international fair. There are virtues in good charters and in good systems; but there is no substitute in a democracy for personal civic activity. Whenever this cease general inefficiency begins and corruption follows. There is no short road nor chartered way to safety.

NEW CONTROVERSIES ABOUT COEDUCATION

COEDUCATION has come to be regarded in the Western State universities, where it has its principal home, as a natural educational system that has proved itself. But in many men's universities in the Eastern States it is yet looked upon as a Western experiment that must suffer many modifications, if not ultimate abolition. The discussion used to turn on the good or bad social influence, sometimes on young men, but oftener on young women, of such association of the sexes.

But now the controversy has been shifted to the influence of women on the quality of the intellectual work done in these universities. In some institutions they show a tendency to monopolize certain groups of studies, especially English literature; and the question is raised whether literature is essentially a feminine subject. One inference is (whether it be warranted or not) that many young men leave alone courses in English literature because the young women take them, regarding the subject as a girl's matter. A still more interesting question is this—is literature so taught as to appeal rather to the taste of girls than to the taste of boys?

But the most interesting subject of recent discussion in the coeducational universities is the rapid proportionate increase of young women in the academic departments. In 1900, as estimated by Prof. James Rowland Angell in *The Popular Science Monthly*, the number of women in the department of arts and sciences (not professional schools) at the University of California was 55 per cent. of all the students; at the University of Minnesota 53 per cent.; at Chicago University and at the University of Michigan 47 per cent. Leland Stanford University has limited the

number of women that it will admit to 500, Chicago University no longer permits the two sexes together during the freshman and sophomore years, and there is discussion of similar limitations or of limitations in number elsewhere. This restriction recalls the expectation during the early days of coeducation that among the students men would always outnumber women. These institutions were once regarded as men's colleges to which women were admitted. The fear now is that some of them may come to be regarded as women's colleges to which men are admitted.

This tendency recalls the economic fact that played an important part in the establishment of the coeducational system. In many State universities women were at first admitted partly if not wholly because the State could not afford to establish two institutions of high grade. Economy had much to do with the movement. This economic fact still has force, but it has been forgotten by many who discuss the social and educational aspects of the system.

A CALL FOR GREATLY INCREASED SCHOOL EXPENDITURE.

THE public school system of the United States deserves the credit that has been given to it, even perhaps the rhetorical praise by its patriotic eulogists, which, however, is sometimes a tiresome flow of words. Statistics (which can never tell much worth knowing about such a subject as education) betray us because they present such large totals of achievement that the individual child is hardly visible; and the work done on the individual child is the only test of the whole matter.

But, remarkable as the development of the system has been in many of our commonwealths, it lags far behind our needs and opportunities. How far it lags President Eliot makes clear in his stimulating address that is published in this magazine. He points the way to greatly increased expenditure on the schools. It must be a revolutionary increase of expenditure if they are to do with excellence the task that is committed to them.

Public opinion in such a matter generally moves by impulses. We go forward with great speed; we reach a certain point in liberality and in achievement; and then we rest or turn to other tasks. The time is opportune

now while the flood of prosperity continues for another long, forward movement made both by communities and by individuals for the bringing of our public educational work to such a standard of excellence as no country in the world has yet reached. When the history of our great school system is truly written it will probably appear that our own time was a time of general acknowledgment of its necessity but of somewhat half-hearted support—that we had not made full proof of our faith by our public liberality. So long as there are from forty to sixty pupils to one teacher the individual child is partly forgotten or partly neglected, whatever impressive totals school reports may show. The extraordinary addresses that President Eliot has been delivering to associations of teachers in New England make the most stimulating literature of the subject that educational agitation has provided for a long time.

A MORAL REFORM IN THE INDUSTRIAL MAN

THE Society of Friends has invited the other Christian sects to send delegates to a national conference for the discussion of the liquor traffic which they propose to hold several years hence—a very proper and characteristic act. This call will remind the social reformer of a long succession of organized efforts in behalf of temperance. At one time societies were formed all over the country to promote total abstinence. In many States almost every village had its "lodge." At that time the temperance lecturer was almost as well recognized a person as the evangelist of other periods. The preaching of total abstinence became an organized industry. It had its well-patronized press, and at least one publishing house laid the foundations of its career by the issue of temperance periodicals and books.

Then came the era of prohibition laws. Many States passed such acts, and the Prohibition party became a power in politics. Following this form of agitation came the effort to introduce into the public schools the study of the effect of alcohol on the body; and it was only a few years ago that the Committee of One Hundred, men of wealth and men of sociological zeal, conducted an investigation into the drink evil—the legislative efforts that have been made to suppress it, the results of open barrooms and of high license in cities, the physiological results of drink, etc.; and the

publications of this committee form the best practical literature of the subject. It has been a long and earnest and many-sided agitation.

A great change has taken place in American habits during the last generation or two. Drunkenness has not been stopped—far from it; but it has lost the toleration that it once had. There was a time within the memory of men yet in middle life when in many parts of the country it was considered a pardonable weakness provided it were not too often yielded to. Now it is regarded as a disease—often as a criminal disease. Its victims everywhere lose social standing.

And the strongest force of all is what may be called the industrial condemnation of drunkenness. No man who gets drunk can now expect to hold a place of trust, whether in professional or commercial or mechanical life. A bank will not have a drunken president, nor a railroad a drunken brakeman. A man who drinks loses his job; this has become a well-nigh universal rule in working life of all grades.

The eradication of drunkenness has by no means been accomplished. Nor is it even in sight. There is work enough for the Friends, in their gentle and persuasive way, and for all other sects and classes of self-restrained men. But the strongest influence that has made for the temperate indulgence in liquor has been the social influence of industrial life—the demand that every man who counts for anything in a democratic society must be efficient. This great moral reform must be accredited chiefly to industry.

THE STANDSTILL OF WOMAN SUFFRAGE

THE death of Mrs. Elizabeth Cady Stanton at a ripe age (and she was in many ways a remarkable woman) recalls the slow progress that the cause of woman suffrage has made during the comparatively long period of agitation for it. It has had the championship of many influential men as well as of such remarkable women as Lucy Stone and Elizabeth Cady Stanton. Of course, too, it has drawn to it, and suffered from, the favor of many shrieking, unattractive "reformers," as every radical proposition does. Four Western States have granted the ballot to women, but the experiment has not yet convinced other States of the wisdom of doing so. In many communities they vote at school elec-

tions and for certain other local purposes. There has been a considerable and proper change also, as a side result of the agitation, in the laws of many States regarding the property rights of women. But the main aim of the suffragists has for a good many years made little headway, and the probability of their further success seems as remote as ever.

ACCIDENTS ON AMERICAN RAILROADS.

FOR the year ending June 30, 1902, 303 passengers were killed on American railroads and 6,089 injured—a very decided increase over preceding years, for the figures of 1901 show but 282 killed and 4,988 injured, and those of 1900 but 249 killed and 4,128 injured. This shows that the number of passengers has increased and traveling conditions have not become less dangerous.

The diminution of one kind of accident to employees is cheering, for the means whereby this accident rate was lowered points the way to securing greater safety. In 1902 2,819 railroad employees were killed and 38,900 injured, as against 2,957 and 46,130 in 1901 and 2,799 and 43,771 in 1900. These totals are deceptive, since certain classes of employees included in the earlier years do not appear in last year's figures. Probably, as with the passenger lists, just as many employees are killed or maimed now as formerly, with one notable exception.

The Interstate Commerce Commission reports that 68 per cent. fewer brakemen are killed and 81 per cent. fewer injured in coupling cars now than in 1893; and they ascribe the improvement to the Safety-Appliance Act of 1893 requiring automatic couplers. In other words, the single significant gain in safety came through legislation. Rigid laws are the best guarantee against railroad accidents.

THE RESTORATION OF THE WHITE HOUSE

THE White House is to be restored, and a part of the work has been done. The amazing fact is, the original plan of it had been forgotten and to an extent defaced and changed. The house had so been put to utilitarian uses for a century that its real nobility of plan had been forgotten, and at last utility had defeated itself, for it was not large enough. There was not room for many proper functions; at great receptions guests were indecently crowded, and there was

not even enough living room for a large presidential family. Everybody who has had occasion to go to the White House must have felt, too, the insufficiency and even the indignity of the President's offices and of the hall outside, where there was always a group of newspaper reporters. The whole scene reminded one of the ante-room of a court-house in a second-rate country town.

The front of the White House is not the side facing on Pennsylvania Avenue, which has been used as the approach to it, but the side facing the river. The public has always used the back door. The distinguishing features of the architecture are the two long terraces, one of which had been put to no use at all and the other concealed by conservatories. These are noble and impressive parts of the original plan and give dignity to the whole structure when seen from the river side. The proper public entrance is on the east side (next the Treasury Department) through the east terrace. At the end of the west terrace the new executive offices have been built.

Mr. McKim, the architect who has restored the plan of Hoban, the original architect, has done another national service by making the White House as it was meant to be. The interior furnishings, too, are in keeping with the period when the house was built.

OUR WASTE OF OLD WORLD HANDICRAFTS

MANY interesting things which Americans go abroad to see could be had in any of our large cities if we would but encourage the immigrants who come to our shores to preserve the best of their old-country life." So recently spoke Miss Jane Addams, of Chicago, and she spoke with knowledge. The remark is suggestive. Immigrants are made to feel by our treatment of them and by their surroundings that their old life must be cast aside. The elders among them often feel regret at the swiftness with which the children become ashamed of their native ways and dress, and even of their parents themselves. This rapid Americanization in many cases means the abandonment of their handicrafts. Miss Addams told the story of an Italian in Chicago who, missing the art of his own land, carved the doorpost of his rented apartments and decorated his ceiling with stucco; and he was fined by his landlord for disfiguring the property! There are said to be many immigrant workmen who have

never let their skill be known because they think that they must literally begin life anew in America. Woodworkers, metal-workers, potters and many other skilled craftsmen sometimes discard their native industries as they discard their native speech.

We came near to permitting (for we long ignorantly encouraged) the Indians to lose their native handicrafts, as basket-making and blanket-weaving; and the same sort of carelessness loses to us, no doubt, many of the useful occupations of the European peasantry. We might import them all; we do import them all and fail to encourage them. Then we go to Europe and pay high prices for objects that might be made in our own cities by the natives of all the lands that we ransack. Our country ought to be the home of as many handicrafts as it is of different peoples.

POSTAL STORIES OF GROWTH AND PROSPERITY

ONE of the most interesting evidences of our continued prosperity is the enormous increase of 20 per cent. in the postal business of the fifty largest post-offices in the United States. This increase implies chiefly the development of commercial correspondence and other commercial uses of the mails. It means a large increase in the volume of printed matter, too. These fifty post-offices yield one-half of the whole postal revenue.

But it is not only a story of commercial prosperity that may be read in postal statistics. The increasing density of population is indicated by the rise in the number of post-offices—from 64,000 to 76,000 in ten years, or more than a thousand a year. Within the same period the number of postage stamps annually sold increased nearly two billions—that is, say, it was very nearly doubled. Hardly less important than the commercial story told by the growth of the business of large post-offices is the meaning of the development of rural delivery systems. There are now 8,500 routes and there are petitions for 10,000 more.

THE EASTWARD AND WESTWARD SPREAD OF CHOLERA

ONE of the great sanitary tasks of civilization was done when, during the American occupation of Cuba, yellow fever was stamped out at Havana. Another

and greater task of a similar kind is to rid the world of cholera. In its Asiatic breeding-ground it always exists, and at intervals it spreads eastward and westward and again retreats. But it never dies out. It has made visits to other continents in recent times once in about twelve years, and it is now by this calendar nearly due again in Europe or America.

It was reported on November 1st that more than 75,000 cases had occurred this year in the Philippine Islands, which are now (as such a disease travels) dangerously near to us. The mortality has been as high as 75 per cent. of the cases, and in some towns and provinces the population has been decimated. But it is now fast disappearing, and there are no cases in most of the provinces. But in China the disease has been playing havoc—at Nanking, where 40,000 persons had died before November 1st, at Hong Kong and at Peking. It is making its way westward, too; for it has this year caused tens of thousands of deaths in Egypt.

COLOMBIA AND VENEZUELA IN CONVULSION

CIVIL war still wages in Venezuela and Colombia, and no one can yet safely predict the outcome in either country. Old men are still living who remember the great liberator, Simon Bolivar, and since his day Venezuela has seen 104 revolutions, her longest period of comparative calm having been from 1870 to 1889, when Guzman Blanco was dictator and governed the country, either directly as President himself or through puppet presidents whom he named.

As he rode into power at the head of a revolution, so did the present President, Cipriano Castro. A revolution broke out in February, 1899; it was suppressed and a provisional government was formed under Castro in September, 1899. In the revolution which began soon afterward the so-called Liberals of Venezuela under Castro espoused the cause of the Liberal rebels in Colombia, and Colombian troops violated Venezuelan territory. When the Colombian minister left Caracas in August, 1891, the United States offered to mediate between the two countries, but Venezuela declined, and later rejected a similar offer from the Pan-American Congress at the City of Mexico and from Chile. At present mediation is not of vital importance, as the civil strife in each country is all-

engrossing, and neither has a government sufficiently stable to encourage a mediator to deal with it. It is not improbable, too, that when internal quiet shall have been restored international irritation will disappear.

The revolution in Colombia has been of a more devastating character than that in Venezuela and is of more interest to the United States. The whole country is being laid waste; the people are becoming poorer and poorer; the government is hopelessly bankrupt. The output of worthless paper is so large that it cannot be correctly calculated. The revolution has continued unremittingly for three years, having started in the autumn of 1899. It followed a long period of oppression under Dr. Rafael Nuñez, who came into power as a Liberal in 1884, but promptly turned Conservative, and by force, fraud and corruption held the country in his grip until his death in 1895. The revolt is against his feeble successors and imitators.

Toward Colombia the United States sustains a peculiar obligation. In 1848, when James Buchanan was Secretary of State, before a railroad was built across the Isthmus of Panama and when a canal was hardly dreamed of, the United States made a treaty with what was then New Granada and is now the republic of Colombia, guaranteeing the perfect neutrality of the isthmus from sea to sea, that transit should not be interrupted or embarrassed, and that Colombia's sovereignty should never be disturbed. In 1855 the railroad was built, and whatever turn the troubled affairs of Colombia may take, this road and the land through which it runs must be kept open by the United States. To protect its marines have landed on several occasions, and in November of last year Commander McCrea of the *Machias* ordered the revolutionists not to bombard Colon, the eastern terminus, while at the present time Admiral Casey guards the strip with a formidable fleet, and permits troops to use the railroad only when there is no danger of conflict.

When the present revolutions shall cease in Venezuela and Colombia, if the revolutionists win, governments will be reorganized on a liberal basis. After a time the leaders will endeavor to entrench themselves in power by the familiar methods, and new revolutions will follow. If, on the other hand, the revolutionists are crushed they will watch for

an opportunity to revolt again. This, unfortunately, is the history of government in the southern republics, and tranquillity seems to come only with a dictator, who is nominally a president, in control. It is fortunate when he is bold and progressive, as in the case of Porfirio Diaz of Mexico, and unfortunate when he is both corrupt and reactionary, as was the case with Rafael Nuñez of Colombia.

THE LESSONS OF THE SAMOAN AWARD

THE influence that the Hague Arbitration Tribunal has had, by reason of its decision of the Pious Fund case, has been out of all proportion to the importance of the case itself. The fact that two governments so soon submitted a controversy to it, and that it reached a decision in a reasonable time and in a reasonable and businesslike way, is a convincing demonstration of its utility. It has proved that it is a practical piece of machinery. The press and the public opinion of the whole civilized world now regard it seriously and hopefully; and there is talk at more than one European capital of submitting even more important cases to it.

A striking proof of the probable utility of the tribunal is given, by contrast, by the decision of the King of Sweden as arbitrator of the Samoan dispute. The United States, England and Germany submitted this case to King Oscar. He has handed down the decision in the controversy about damages done by men-of-war to Samoan property in favor of Germany and against the United States and Great Britain. The decision is of course accepted cheerfully by all the parties to the contention; but the method of selecting one person as an arbitrator, in comparison with the method of the Hague Tribunal, already seems antiquated. The King of Sweden has other duties. He undertook this arbitration as a favor to friendly nations. He chose his own advisers. The whole method is unscientific and it seems likely now to become obsolete.

The Samoan case has almost gone out of the public mind. Its details are hardly worth recalling here—except to remark that the triple guardianship of Samoan affairs by the United States, Great Britain and Germany proved a failure, as it is easy now to see that it must. Yet it was often cited by those who were opposed to the American occupation of the Philippine Islands as a method whereby

they might have been managed. Such a method would of course have failed—failed probably with tragic results.

THE SWARMING MILLIONS OF CHINA.

THE population of China has always been a subject of dispute by statisticians. The Chinese count has not been regarded as trustworthy, and the estimates of foreigners, however carefully made, were but guesses. But the recent enumeration that the Chinese Government has now published is accepted as at least better than any preceding count or estimate.

It shows the enormous total of 426,000,000 persons—a gain of 13,000,000 over the Chinese count made in 1842. Compared with the growth of our own population this is a very small increase. But epidemics and the lack of sanitary knowledge and wars and the crowding of the population greatly check the natural increase. Of course the provinces differ greatly in the density of population. Thibet, Mongolia, Turkestan and Manchuria are sparsely peopled; but in the great provinces, such as Shantung and Honan, every available foot of soil is used and occupied. There is a considerable area so densely populated as to warrant this comparison—if all the people in the United States proper lived in Texas, 40,000,000 more would have to go there before the population would be as dense as it is in this part of China.

Since Chinese immigration is forbidden by the United States and by Australia, these swarming millions have no outlet that they know how, or are disposed, to take; and the problem of lifting life higher in such a hive, or of radically changing it, will be solved, if it be solved at all, by the railroad. Easy and cheap transportation may in time change the conditions of life there; but no other influence that we now know seems likely to do so.

THE DEATH OF MR. FRANK NORRIS

THE death of Mr. Frank Norris, which occurred on October 25th, in San Francisco, at the age of thirty-two, was a definite and serious loss to American literature. The work that he had already done was considerable and important; for the two books that he finished of the great trilogy of novels that he had planned are original and vigorous

contributions to the best class of our fiction. Other writers, some by choosing historical and some by choosing social subjects, have interpreted various phases of American life; but he had a larger conception of it—a conception that included its vast economic significance—perhaps than any other writer of fiction. He stood firmly, too, at a time of sensational "successes" in fiction, to his artistic convictions. Many a writer of real ability has been dazzled and has suffered a change of ideals because of the financial success of cheap work; but he held true with an heroic persistence to the best that was in him. He knew that he could write a swashbuckling romance, and he was ambitious for success and he was eager, too, for the financial rewards of his work. He could at any time have made a much larger income by writing sensational books, but he worked on, year after year, unswerving and content with the nobler aim.

After practising his art in his earlier stories, which all showed originality, and after outgrowing certain obvious faults that marked his youthful works, he had, while still young, found a great subject. The strong grasp of his imagination and his mastery of his art were just beginning to show themselves. Here was a man, then, who, having done most noteworthy and, we think, lasting work in his youth, died just as he was reaching the easy command of his powers. The pity of it comes keenly to those who look out over American literature now in the making and see so little genuinely original work.

To those who knew Mr. Norris, his death brings a deeper loss than the premature close of a brilliant literary career. He was a strong and lovely personality. His youthful and beautiful face, crowned with gray hair, wore a smile for all his friends. He was associated with the publishers of this magazine from the beginning of their career as publishers of books; and he showed such a rare genius for friendship that to them the loss to literature is swallowed up in the loss of a friend and companion. He carried with him always an atmosphere of cheerful earnestness. He was a very noble man—strong and gentle and brave and true. The memory of him is so precious a possession to those who lived and worked with him that they will carry it as an uplifting influence all their lives long.

THE BONDS OF AMERICAN CORPORATIONS

(THE WORLD'S WORK publishes every month an article in which some timely and vital subject of the financial world is taken up)

SEVERAL years ago nearly all capitalization issues on the part of important corporations were in the form of stock. Since the summer of 1901 and continuing with increasing volume the tendency has been toward the issuance of bonds instead of shares of stock. It is a tendency all the incidences of which cannot be felt in a period of great financial exaltation such as the present. But the tendency is a most significant one.

That the extent of this tendency may be realized it should be noted that during the current year scarcely an important issue of capital stock has been announced, with the exception of \$35,000,000 by the New York Central Railroad. This issue is explained upon grounds peculiar to this railroad, primarily the fact that assurances were at hand that much the greater part of this stock would be subscribed by the present controlling interests in the property. Conspicuous among the large issues of new capital in the form of bonds is the case of the Brooklyn Rapid Transit Railroad, which announced its intention to borrow \$150,000,000 on bonds. The Pennsylvania Railroad is to obtain money for the building of its tunnel into New York by the issue of \$50,000,000 in bonds. This action of the Pennsylvania is particularly significant, for up to this time this railroad has relied on the issue of new stock for its capital, increasing the stock from \$129,305,000 on January 1, 1898, to \$203,272,100 on January 1, 1902. In addition there might be mentioned the following very large bond issues: Atchison Railroad, \$30,000,000; Norfolk and Western Railroad, \$20,000,000; American Telegraph and Telephone Company, \$10,000,000; Mexican Central Railroad, \$10,000,000; and the notable case of the United States Steel Corporation, which is now seeking to convert \$200,000,000 of its seven per cent. cumulative preferred stock into five per cent. bonds and to issue \$50,000,000 bonds in addition to provide necessary working

capital. Further evidence of the pronounced tendency is found in the fact that in 1901 the New York Stock Exchange "listed" \$923,010,100 in bonds against \$443,713,000 for the previous year, while exclusive of the \$1,018,000,000 of Steel stock listed, the stock listings for 1901 were only a few million dollars in excess of those for the previous year.

Many of these issues of bonds were determined by circumstances peculiar to the corporations concerned, but the general run of them were influenced by certain underlying conditions of the American securities market, and were also affected by disastrous experiences certain railroad interests had had in retaining the management of their properties. When Mr. J. Pierpont Morgan was on the witness stand last spring in a case involving the validity of the Northern Securities Company merger, he gave one explanation for the existence of that combination which has been oftentimes quoted in Wall Street since. "I wanted," said Mr. Morgan, "the stock of railroads I had helped to build up and make prosperous to be where I knew it was secure—where it could not be bought up over night. I felt that if a corporation with \$400,000,000 capital stock held this stock, it would be safe there, if it would be safe anywhere in the world."

In this desire to have the control of properties in hands whose locality is not a matter for speculation, this anxiety to prevent the secret purchase of control of properties in the stock market—here is to be found one of the directing reasons for these new issues of bonds. For bonds confer no voting power upon their holders. Possessors of stock may elect a management. They are partners in the firm, so to speak. Bondholders are creditors. They can have no voice in the direction of the properties until the corporations shall have become bankrupt. If a corporation, therefore, issues ever so many millions of bonds, the management runs no risk of creating possibly hostile voting power. Managers of

many of the great corporations of this country have had occasion to shudder within these last few months at the assaults made upon them through quiet purchases of stock. The cases of the Louisville and Nashville Railroad and the Colorado Fuel and Iron Company are still vividly in the minds of the investing community.

This, then, is the predominant reason for the preference for bond issues over those of stocks. There are many, however, who feel that the investment public has absorbed about all the "stock" that it will. It is an extremely difficult matter at present to float a new issue of stock. Even the great Steel Corporation, backed and guaranteed by the powerful house of Morgan, with its enormous earnings and conservative management, and paying seven per cent. dividends upon its preferred stock, has not been able to induce the public to buy that stock at a figure much above \$95 a share. With such a conspicuous warning, it was but natural that financiers should cast about for a more hopeful method of obtaining capital. It is freely predicted that should the Steel Corporation issue its \$250,000,000 in bonds, those five per cent. promises to pay will command a higher market value than the seven per cent. cumulative stocks of the same company. The securities market has come to feel that there is some magic in the word "bond." It, at least, is sure. No matter how bad times may be, the bondholder will get something. The stockholder may suffer an absolute loss. Since the memorable panic of May 9, 1901, all the machinations and allurements of Wall Street have failed to attract a large public into stock market speculation. There have been various artificial bullish movements, but in every case they have been traced to pools held within narrow limits. Corporations have been made to realize that their capital issues could not be carried upon the crest of waves of wild, indiscriminate speculation. They have been made to feel that the only way to induce the public to allow its money to be used in their enterprises would be to give to that public some security.

It must be regarded, at the same time, as a most hopeful indication that the bonds of American corporations have come to have such an assured value. If they had not they could not be floated, in spite of the charm surrounding the word "bond." The public

must be led to believe that there is a reasonable probability that the interest due on the bonds will be paid. If the public has confidence in this fact, it will willingly sacrifice a seven per cent. cumulative stock in the most prosperous of corporations for a five per cent. bond of the same institution. The public realizes that the corporation will thus save two per cent. in dividend payments, which may be utilized in improving the properties and making them more likely to continue five per cent. payments for a long period than could be the case with seven per cent.

But right here occurs the chief danger of this wholesale issue of bonds, in the opinion of thoughtful students of modern finance. A bond constitutes a fixed charge upon the earnings of the corporation. In times of prosperity, a heavy fixed charge is not felt to be burdensome. If business be depressed, however, the fixed charge becomes immediately a peril. No matter how much sales or profits may fall off, interest payments must continue to be made or the company go into a receiver's hands. Bonds floated, therefore, upon the basis of earnings in times of prosperity are liable to prove most disastrous when depression comes. No issues of securities which have not passed through a period of depression can be viewed with absolute confidence by the investment world. The establishment of rates of interest, the fixing consequently of the exactly proper sums in which issues of bonds should be made to give the corporation permanent safety, constitute one of the most difficult problems with which corporation managers have to deal.

Conservative investors have begun to inquire just what possibilities of "watering" there are in bond issues. When the general public is so kindly disposed toward a bond, there is an extraordinary temptation to capitalize earnings, as well as properties, in this form. The form has so far been, in most cases, utilized by corporations of established conservatism and reliability. But even as late as October a prominent trust company in New York announced that it had agreed to accept the property, franchises, patents, etc., of a newly established telephone company, in return for which it would guarantee the issue of \$100,000,000 in bonds, to be sold as needed. This transaction was no doubt entirely wise. It illustrates, however, the striking character of this tendency.

THE BUILDER OF THE NEW YORK SUBWAY

A STORY OF STEADY ACHIEVEMENT SHOWING THE QUALITIES
BY WHICH MR. JOHN B. McDONALD BECAME CONTRACTOR
FOR THE LARGEST MUNICIPAL ENTERPRISES IN THE WORLD

BY

RAYMOND STEVENS

THE day shift of workmen on the New York Subway had hardly begun their morning work on a section far uptown when an automobile whirled up to the edge of the trench and a short, broad-shouldered man, brisk and businesslike, alighted.

"J. B.'s late this morning," said a workman, as the visitor, stepping quickly down a ladder, started with alacrity along the tunnel, his keen gray eye glancing sharply here and there with critical gleam.

The rhythm of the workmen grew speedier as the new arrival went by. Foremen listened deferentially to his quick, decisive comments. The man was John B. McDonald, contractor with the City of New York for the 2,000,000,000-gallon Jerome Park Reservoir, one of the largest storage reservoirs in the world, the Rapid Transit Subway, the largest contract ever let, and, with his company, for the subway tunnel to Brooklyn—three contracts that amount to nearly \$50,000,000; and early as it was, not half-past seven, he was later than usual on his daily tour of inspection. To a puzzled competitor who once exclaimed "How does McDonald make his success?" another, wiser, replied: "He gets up early in the morning."

The northeastern section of the country is dotted with engineering works built by him—railroads, bridges and tunnels from Georgian Bay to Maryland; and the contracts have gone to him and have been successfully completed because in every case he has known to a hair beforehand just what the tasks would call for. The magnitude of the task involved in building the New York Subway appals an observer who, visiting the mine 100 feet deep at 181st Street, thinks of the tunnel already begun at Post-Office Square and the miles upon miles of torn-up streets between—all

part of a single colossal undertaking carried on by a single man. But when Mr. McDonald undertook the problem and some one said "Difficult job!" he replied:

"Difficult? Not a bit. It's cellar digging—just a lot of cellar digging. Put all the cellars in New York in a row and they'd make a tunnel from here to Philadelphia. There's nothing hard about digging a cellar, and a row of cellars isn't any harder. It takes longer—that's all."

This power of simplification—this refusal to be worried by details—is the quality that has enabled Mr. McDonald to accomplish large tasks in engineering work when his preparedness has secured them.

At his office he is the same alert captain of men as within sound of the chugging of air-drills and the noise of labor underground. From his morning inspection of the Subway, now one section, now another, or a half-dozen others, he hurries downtown—he always hurries—and, entering the Park Row Building just across from the City Hall end of the Subway, is carried up twenty-six stories to his offices. The building is the tallest in the world—in New York all things are superlative—and his office floor is just beneath the roof. From his office windows, as far as eye can see, straight north, run the canyon-like streets of Manhattan, and in the middle is the scar of the Subway. It is there all day before his windows—an object lesson in achievement—a thing to dream over. But dreaming about it is not for him. He turns to his pile of carefully sorted letters, plunging vigorously back to the work that is constant stimulation to him.

Engineers' reports, blue prints showing the condition of every foot of the Subway, sub-contractors with statements of work done and claims for payment, drafts for contracts,

plans for variations, conferences with the Rapid Transit engineers, bills for all kinds of expense, come in quick succession. With a thorough knowledge gained by years devoted to similar work, quick, decisive, quiet, he gets through the vast amount of work with less time and trouble than many men put into trivialities.

Mr. McDonald was born in Ireland in 1844 and was brought, when three years old, to New York, where his father had already located. At the age of eighteen he left the public schools to go to work—first in the office of the Registry of Deeds, for he had no idea of what he wished to become. He must be something, however, "something worth while," he declared to himself; and night after night he studied practical subjects in the evening high school.

"I want some real work," he told his father when he had copied deeds for a year. And when this real work took the form of time-keeping on the Boyd's Dam contract, a part of the Croton Water system, he discovered his vocation. Speedily made foreman, he soon showed ability to handle men, but all the time he was on business of his own—learning the details of contracting and constructing—for his time was coming. Four years he served, and then, on recommendation of the Chief Engineer, who had watched his work, he became Inspector of Masonry on the New York Central tunnel. The contractors were subletting sections. The young McDonald studied one of them with care. "I can do it myself," he confidently thought.

He put in a bid. It was accepted. The work was done—and well done. Now, as he passes through the tunnel, he sees, supporting the roadway at Ninety-sixth Street, "The Big Arch," his first business venture. The contractors, liking the work, gave him other contracts—on the Boston & Hoosac Tunnel Railroad, the Georgian Bay branch of the Canadian Pacific, and the extension of the Lackawanna from Binghamton to Buffalo.

By this time his experience had widened until no construction problem balked him. He was reaching his full business stature. Wherever in the northeastern part of the United States great works or new railroads were building there were gangs of his men—on the West Shore Railroad, the Potomac Valley, the extension of the Illinois Central from Elgin, Illinois, to Dodgeville, Wisconsin, the Trenton "cut off" on the Pennsylvania,

the Akron Junction in Ohio, the extension of the Baltimore & Ohio from Baltimore to Philadelphia, and others.

But these were ordinary tasks. They did not show that the young contractor had unusual ability. He could capably carry plans through, but had he any of that capacity that makes captains of industry?

He was living in Baltimore, to be near his railroad work. The city's transportation facilities were wretched. The Baltimore & Ohio Railroad, unable to get a franchise for tracks through the city on grade, was ferrying its trains completely around the city to make connections with Philadelphia. Tunneling had been put aside. Baltimore stands on low gravel hills under which run countless little streams, perhaps the most difficult of soils to tunnel. The problem came to his attention. He thought it over; he computed; he estimated; and in the end he prepared a plan for a tunnel. He convinced the railroad officials that he could build one. Public opinion said an attempt to build a tunnel under Baltimore would endanger property, would imperil life, and would come to naught—the task was utterly impossible. But a franchise was obtained and the work was begun. Difficulties arose. The soil proved so full of water that buckets had to be used in excavating. Quicksands were encountered. A subterranean stream burst through the tunnel wall one day, and laden with fine white sand, flooded out the workmen, swamped the works and stopped operations. But one after another the bucketfuls of mud came out; the quicksands were pumped dry, built on and passed; the subterranean stream, led to a brick conduit beneath the tunnel, was diverted to the harbor; and the tunnel bored on. When streets settled Mr. McDonald, with his usual foresight, had material and workmen ready, and the streets were filled in and repaved. Day after day with a rubber coat and hip boots he went down into the tunnel to direct the work himself. For five years the struggle continued. Any visitor to Baltimore knows the outcome. The Baltimore Belt Railroad, as the tunnel is called, is one of the hardest bits of tunnel construction ever successfully accomplished. It is the work of one man. Then, as if one such task were not enough, he submitted a bid for the Jerome Park Reservoir in New York City and secured the contract. Besides all this, he is head of a company that



Photographed by E. Rockwood

JOHN B. McDONALD

WHO IS BUILDING THE NEW YORK SUBWAYS AND RESERVOIR

owns a manganese mine in Central America that is shipping ore to the United States Steel Corporation.

But Mr. McDonald's great work is the subway. For years he has taken a special interest in the rapid transit situation in New York. Realizing that an extensive subway system was certain to come, he had long had an ambition to build it. He was a bidder on the so-called "arcade" subway plan of the 70's; indeed, he lost much of the property he had so arduously acquired when the plan eventually fell through. But that had not discouraged him. As an expert he was frequently summoned before the Rapid Transit Commission for his advice. The present plan called for bids on a comprehensive task—a contract not only to build the subway but to equip it with a transportation system and run the system for fifty years, paying back to the city the first cost of building. While there were dozens of contracting firms eager to do part of the work, only two submitted bids for the whole. Mr. McDonald, after spending a month at his Jerome Park office figuring on the estimates, put in the lower bid by nearly \$5,000,000. The city required cash, securities and bonds to the amount of \$7,000,000 to bind the contract. On account of disagreements with the surety companies as to terms, Mr. McDonald asked for an extension of the time for qualifying. Immediately there was talk that no one would back him because his bid was so low as to exclude profit. The other bidder was asked if he expected to get the contract through default. He replied:

"No, sir. John McDonald has got that contract and he'll keep it. He is the right man to do it. Security won't be lacking. Don't you worry about that."

Mr. McDonald had intended originally to build the subway alone, but feeling that the terms demanded by the security companies were exorbitant, he interested other capitalists, among them Mr. August Belmont. He convinced them that he had a profitable contract; and a corporation, with \$6,000,000 capital and with Mr. Belmont as president, known as the Rapid Transit Construction Company, was formed to finance the undertaking. The construction has been pushed so rapidly and so successfully that the subway will be open to the public ten months before the contract time.

Throughout his career Mr. McDonald has had the faculty of finding competent men to assist him and of interesting conservative capitalists in his projects, for his is a personality that begets confidence. He has had equal success in dealing with labor. He has had but a single serious strike in all his experience. That occurred on the Jerome Park work. One forenoon in May, while the work was going on serenely as usual, a few Italians at the dump ground, apparently without preconceived plan and without any notice save a shout to the surprised foreman, "We strike," stopped work and started for the reservoir two miles away. There they were joined by a thousand more. Greatly excited, shouting, waving their shovels, accompanied by many of their women and children, who lived near by, they rushed toward the office. Mr. McDonald stepped out. He saw moving toward him an excited mob evidently bent on violence.

"What do you want?" he demanded, advancing to meet them.

"We strike—more pay," came the cry, mixed with shouts and threats in Italian.

"Strike? If this is the way you strike, you can keep on striking. Get out!"

A moment's pause, another step toward them—"Come, get out," and the mob melted away.

Fearing that the excited men, with so much dynamite accessible, might do serious damage to the works, he went for a body of police to drive them from the reservoir. Within a week the men returned unsuccessful. Mr. McDonald's method in the case of any grievances has always been to call the men to his office and settle the matter man to man, or, when the laborers have been organized, to treat with the union's agents; but he is not the man to be driven or frightened. Said an engineer who had long been connected with him: "He has had little trouble because the men get anything reasonable they demand." The 10,000 men on the subway, though all under sub-contractors, are protected by an effective scheme of arbitration devised by Mr. McDonald.

He is a member of many clubs—the Lawyers' Club, the Manhattan Club, the Colonial Club, the Maryland Club, the New York Yacht Club, and of several golf clubs as well, for he is enthusiastically devoted to that game and is an expert player.



GEORGE GREY BARNARD, SCULPTOR

BY

ALEXANDER BLAIR THAW

Illustrated from photographs by W. E. Cooper and G. C. Cox and a portrait by A. R. Dugmore

NATURE'S first appeal, to a child or to a young world, is through the eyes. Before we give much heed to the spoken word, even before we learn to listen to the power of sound, how we delight in color, how eagerly we try to grasp everything that comes within our vision. Painters and sculptors give us pleasure and delight by their power in the handling of color and of form. But not often shall there appear the man who can do more than this, who shall fill our hearts with wonder and our eyes with tears. To do this, the artist must feel. How deeply, how intimately must he feel the meaning of our life! Through what long and terrible struggles must he go before he can express this meaning to the world! This story, of inward suffering and of both interior and external struggle, is in a few words the story of the life of George Grey Barnard, the sculptor.

And now, with the best of his years still before him, he is given a unique opportunity for expression, since he has been awarded the contract for the entire sculpture scheme for the new capitol of Pennsylvania, the largest contract ever given to a single sculptor in the country. The members of the commission and the people of Pennsylvania are to be congratulated both upon the wisdom shown in giving the painting and the sculpture to a single painter and a single sculptor, and upon

their choice of the men for the work. With Edwin A. Abbey to do the painting one can rest assured that the mural decoration is in safe hands. The State of Pennsylvania is also to be congratulated upon being able to show to the rest of the country, in the commissioners, and in their architect, Mr. Joseph M. Huston, an example of artistic knowledge and of freedom from any kind of influence or partisanship, either artistic or political. And the country at large, the whole world indeed, as well as Mr. Barnard himself, are to be congratulated that he is to have this opportunity to do the great work that is in him.

That Mr. Barnard is a man of unusual powers and a sculptor of great genius will appear beyond a doubt to any one who shall study the man, his life and his present achievement. It is a part of the fitness of things that Pennsylvania should have chosen a son of her soil for this work; for Mr. Barnard was born at Bellefonte, Pa., in '63. Like her, his riches lay deep within him, and like her he had to hew his wealth out of the rocks and stones. But it was equally fitting, and even more necessary, that he should have gone out West while still very young and so become a son of the greater America as well. Near Chicago, on the shores of the great lake, until twelve years old, and then, until sixteen



MR. BARNARD AT WORK ON "THE HEARER" IN CLAY



"THE HEWER" IN MARBLE



THE FAMOUS CARVED OAK CLOCK CASE



DETAIL FROM THE CLOCK

Every child in our day inherits the precious "Life of the Past" in a wealth of detail and sense of growth of the world that could not belong to Homer or Thucydides. From reading our histories of "Man and Earth" a vision in its ensemble, taking the form of an evolution, becomes an ever present consciousness. This consciousness and relation of earth, its elements, wind, water, roots, and unseen powers, with man struggling out from it all like a spirit on the waters, is what I have feebly expressed in my carving of oak. Struggling against and out from the water and roots gleams here and there a serpent form typifying unseen power, Man. This struggle between the elements and man goes on up to the foot of the dial, where the water ends and roots first take hold and lead. The two sources of nature in the form of man and woman holding urns from which water flows in the depths below, the maiden at the top typifying peace and simplicity, the true rulers over all.

—George Grey Barnard.

years, in Iowa, on the Mississippi, wandering through woods and swamps by day and night he learned to know the creatures.

The son of a clergyman of broad sympathies and of a mother through whom chiefly his artistic temperament was derived, he was never hampered spiritually or intellectually, though in the struggle for existence he was always hard pressed.

When only nine years old, through the delightful experience of a boyhood's intimate acquaintance with an old retired sea captain, whose wonderful collection of shells and minerals became later the nucleus of the collection of the University of Chicago, the boy learned much of geology, and grew to know every shell as he later taught himself to know every bird and animal. By fifteen he was an expert taxidermist and in the habit of drawing each creature from the life and so mounting them. He had as many as 1,200 specimens in his collection at this time. Then for about three years he earned his living as

an engraver and worker in gold and silver ornaments. But at the same period he had already found his vocation and begun to model in clay. He was only seventeen

when he refused the offer of a situation which would have "fixed" him for life. From that time onward we find him constantly refusing to accept any and every condition that would



MAN'S STRUGGLE WITH NATURE

An unfinished fragment



FRAGMENTS FROM THE URN WHICH IS TO HOLD THE ASHES OF ANTON SEIDL

From this central group twenty-seven figures of life encircle the urn



GEORGE GREY BARNARD



GOD PAN

Old Pan, past master of the flute,
 Thou lusty, dear, melodious brute.
 Sit on thy haunches by my side
 And blow my spring dream open wide.
 Puff out thy shaggy jowls and make
 The honey buds of nature break
 Abloom for joy; stir up the juice,
 The sap, the chlorophyl, and loose
 Once more the tender, searching strain,
 While all the world goes wild again.
 Puff out thy shaggy jowls and blow,
 Now high and clear, now soft and low,
 Until the music stirs my feet,
 Until my veins the measure beat,
 And that vague wonder masters me,
 The panic of thy melody.
 Ah, Pan, Pan, Pan, one of thy boys
 Still holds to those Arcadian joys,
 Those simple, deep born, keen delights
 Of colors, perfumes, sounds and sights
 And love, love, love, when in the Spring
 The flickers pipe and thrushes sing.

—Maurice Thompson, in *The Independent*.





"BROTHERLY LOVE" OR "FRIENDSHIP"

A copy of a large group on a monument in Norway. The marble typifies that which separates all loved ones though we reach forth with infinite love

seem to him to compromise his conscience or bind his genius.

At the age of seventeen therefore, upon the sum of \$89 which he had saved, he lived a whole year in Chicago, a year of unbroken toil and untold delight, drawing and modeling at the Chicago Art Institute. Humanity had become the object of his study, and the world a piece of clay for his strong hands to model. There was a closed room in the Institute building, closed and locked because the students of the previous year had mutilated the treasures concealed behind that locked door. This treasure was a complete collection of

casts of the works of Michael Angelo. One day the President of the Art Institute gave the key of that door to the boy Barnard, and there, for the first time, the man Barnard found himself face to face with the great drama of humanity as expressed through the human form. From that day he has known his own powers clearly, and has gone on over obstacles and through privations, temptations and sacrifices straight toward his goal.

At the end of his eighteenth year he received an order for a portrait bust of a child. After making his model in clay he took it to



"I FEEL TWO NATURES STRUGGLING WITHIN ME"

"This group is intended to express the battle we all wage who open our heart and mind to the light"—George Grey Barnard



"I FEEL TWO NATURES" IN ITS PERMANENT POSITION IN THE NEW WING OF THE METROPOLITAN MUSEUM

a marble yard, where a piece of marble was given him. There was no one in that country who could give him a word of help. There was the head in clay, and here was the piece of marble, which had to be hammered till the marble became a copy of the clay. His only tools were a hammer and chisels! It was an impossibility, but it had to be done! And it was done, the young sculptor receiving \$300 for his work. And now the road was open to Paris!

There, for twelve long years, Barnard struggled to bring out the genius that was in him, and against difficulties of every kind;

for, besides all the ordinary trials and temptations of Paris, he had at times to bear the extremes of hunger and of cold. But there were generations of strength in the moral and mental fiber of the young artist. Besides these, and in an unusual degree, he possessed that personal force of will by which the Young America is so rapidly taking the leadership of nations: only, instead of steel or iron, he is hammering marble and bronze into shape for her greater glory.

Yet, though he were all will, he might still have failed of his purpose, but for a rare perfection of physical health and strength,



"MAIDEN WITH THE ROSES"

A marble in a mausoleum in Iowa

without which he could not have endured such extreme hardships. For instance, there was a time when, for many months, with nothing to eat but a little rice and milk, he kept on constantly with his work, drawing or modeling sixteen hours a day. And so during these twelve years, in the midst of that gay Paris, he had to struggle for his very life.

There, during these years, the boy of the open prairie found before him the opportunity



"THE BOY"

Modeled in 1884. This is in the private New York collection of Alfred Corning Clark

to train eyes and hands more and more closely, to follow the reality of life and the actual form of things, and to force that actuality into harmony with the ideal image which filled his heart and mind. In the schools, and later, for many years, alone, his skill in handling clay and charcoal and the development of his powers of visualization brought him many honors, all culminating in the year "'94," when, at



"MAIDENHOOD"

the age of thirty-one, he won his greatest success up to that time upon the exhibition of his work at the Salon, a triumph accorded him by a jury of the greatest artists, by the foremost critics and by the people of Paris.

Shortly after, against the advice of his friends and, as usual, following the dictates of his own will and conscience, he returned to America; and it is, after eight long years,

privations of his condition of life. This work, "The Boy," made when Barnard was little more than a boy himself, was modeled in his little bedroom under a roof through which the rain and snow poured in, so that the sculptor was obliged to hang canvas over his iron bed; and the clay in its wet wrappings had to be covered with part of his bedclothes.

One day after his four-mile walk from the



A MEMORIAL TO MR. PLANT

of the Plant System, given by his employees. It is on the grounds of the Tampa Hotel, Tampa, Florida

a thing to be thankful for that America has learned to appreciate his work and to realize that in George Grey Barnard she has produced that man of the ages, a really great sculptor.

It is a thing of happy omen, too, that his first work, made in Paris fifteen years ago, was seen and appreciated by a fellow countryman, the late Mr. Alfred Corning Clark, and by him bought, at a critical time, when Barnard could not have borne much longer the extreme

Beaux Arts to his room near the Versailles Gate, he found a note asking him to call at the hotel at which Mr. Clark was stopping. The next evening at dusk, in clothes that were mere rags, he reached the door of one of the great hotels near the Opera, only to be stopped by the doorkeeper. But upon Barnard's quiet insistence that a gentleman wished to see him, inquiries were made and it was found that "the boy" should be admitted. And

these two Americans met in the private parlor, and the boy sat down just as he was to a Parisian dinner, his first dinner in many months.

They sat and talked for awhile—and each understood the other. But when they parted who shall say which was the happier or the more deeply moved, the man who had found that boy or the boy who had found a friend. With the fabulous sum of 1,500 francs as partial payment for his first statue, wrapped up in his new friend's handkerchief and put in his hat for safe keeping (for there was not a safe or secure pocket in his rags) Barnard ran, through the night, all the way to the studio of an American acquaintance (for he dared not return to his home near the haunts of thieves and murderers), and there he lay on a couch, dreaming all night of the great work that he was to do.

Great work it is and will be, and therefore it does not always make an obvious appeal. But since sculpture is the most direct of the arts, the great sculptor is able to show to every man something of the divine in human form, something of the relation between man and the universe. As the man develops with the universe a greater harmony appears in the midst of the struggle. So in Barnard's work there is evident a process of evolution. Yet, as the bud contains the complete flower, so in his first work, "The Boy," there is some suggestion, not only of the struggle in "The Two Natures," but of the wonderful simplicity and repose of "Maidenhood."

In the beautiful figure of "The Boy" we seem to see—for the work of the true artist gives liberty, not limits, to the imagination—we seem to see not only a half-unconscious expression of the sculptor's boyhood, dreaming, and groping in the earth for light and truth, but, more than this, we see in it something of our own experience revealed; and then, in the beauty and strength of this young bent figure, we feel all the coming possibilities of the man's power.

His next work of importance was an order for the tomb of a Norwegian philanthropist, a man who gave not only his money but himself to his fellow man. The work is called "Brotherly Love," and shows the nude figures of two young men with their heads partly buried in the rough marble, through which with their hands they seem to be groping for each other. It is a beautiful work,

with a rare charm and an original quality of attractiveness of its own.

It is in this way that Barnard seeks to make his appeal, through the simple symbolism of humanity itself, with none of the adventitious aids of convention or traditional allegory, and free also from their limitations which held back even the strong hand of a Michael Angelo. Therefore, we are not altogether surprised, when we turn to look at the great group called "I Feel Two Natures Struggling Within Me," to feel a sense of doubt, or at least of wonder; and we ask, ourselves whether the sculptor, in this group, taken by itself, has not ventured too near the confines of his art.

A study of the group, however, convinces one that it is important in itself; by its wonderful technical treatment; by the great and immediate impression of struggle which is conveyed in its unique ensemble as well as in the characterization and details of the group; and more especially by its expression of pure vital force. More important still was the indirect value of the "Two Natures" to the artist himself—psychologically as a step in his development as man and artist, and practically as a means of development of his rare powers of visualization and technique.

For one of the most wonderful elements of Barnard's strength lies in the actual handling of the chisel. To the layman it is rather a surprise to learn that the modern sculptor seldom if ever takes a chisel in his hand, his work being done when he finishes the modeling. In Barnard's hands, however, the hammer and chisel have learned to hew and to caress, as they did in the hands of the early sculptors.

A surprising expression of Barnard's power is the next work, completed while the sculptor was waiting to be discovered by America. It is a great clock, an immense piece of wood carving. The conception, though based upon Scandinavian mythology, is the sculptor's most complete and direct expression of the whole of man's struggle in relation to the universe. The wood becomes the giant tree of Norse mythology, or life itself, with its roots running down into primal matter; while all about pours the ocean of chaos. Struggling amidst the waves, winding in great coils, is the huge Mitgard serpent, representing the force that has grown out of inert matter; and now man appears, battling with the serpent,

or human nature in its struggle with natural forces. Among the many groups that tell the story of the ages in this clock of universal time are the three gods of creation. One reaches with aimless hand toward a bit of drift carried by the tide; one takes it and breathes into it the breath of life; and the third speaks to it and endows it with a soul. The central feature of the scheme, standing out in relief from the massive movement and struggle, are the sculptor's trinity—man, woman and child; while, above all the elements of struggle, at one side of the clock-face, is a beautifully delicate figure of a girl, expressive of the purity of life at its summit—on the heights. One looks and looks at the work with growing wonder at the beauty of proportion and of detail, down to the exquisite texture and finish of the varying surfaces.

This work, the sculptor's first and only effort in the handling of woods, is as beautiful and interesting in technique as it is in conception. The delicate and subtle handling of some of the human figures and heads in the midst of the broader masses is curiously fascinating; and the decorative effect of the whole work is very fine and simple.

The great bronze "Pan" is, in this country, perhaps the best known of the sculptor's works, having been seen for a year at the Metropolitan Museum—where in the new wing "The Two Natures" has a permanent place; and it is to be expected that the City of New York, which received "Pan" as a gift from Mr. Clark, will soon find a fitting place for this great bronze. "Pan" is an original, unconventional and very lazy god of the woods and streams, and both in treatment and conception a frankly decorative individual, with a grin and a pair of flopping ears, one up and one down, all quite his own; yet truly a person of great importance, and for other reasons than those of his being the largest single piece of bronze in the country, and of his having created a very panic, as it were, in the New York Board of Aldermen, when they failed to find a fitting haunt for him in Central Park.

He is a cheerful and a very living Pan, and, with the clock, shows us that the sculptor had returned, after a long period of storm and stress, to that frank communion with external Nature from which his life and work in Paris had largely shut him out. This change came at the period of his return to

America, which was marked also by his marriage to a beautiful American wife. So that he became, at the same time, in every sense, a citizen of the world; and, entering fully into the everyday life of men and women, he began definitely to do the work of humanity for which, on the heights, and in a remoter atmosphere, he had prepared.

Since the "Pan" and the clock he has finished two works, in which this important step in his development is well and nobly illustrated. Of these two works, "The Hewer," a colossal figure in a gray-toned marble from the same quarry as Michael Angelo's "David," and the infinitely and tenderly beautiful "Maidenhood," it may be said that, with all the tremendous difference between them, each is, as it were, a complement to the other; and together they splendidly complete Barnard's present achievement, and serve as sure omens of his success in future creations. In "The Hewer," by the simplest synthesis, he has brought together and concentrated in a single figure of primitive man the whole gospel of labor, in its birth and beginning, in its discipline and in its dignity.

In the harmoniously forceful movement of "The Hewer," as in the very central meaning of "Maidenhood," there is some suggestion of the unusual fertility of conception and invention of the artist, the "Hewer" being but a single figure of a proposed colossal group of "Primitive Man." For Barnard's future promise consists not only in these works already done, but in that exuberance of imagination, not too often seen in modern art, which, given power of execution, is one of the marks of genius.

It is impossible, for this reason, to give more than a very general description of his work, a cinerary urn in memory of the late Anton Seidl containing, for instance, twenty-seven figures. Among other orders now on hand, Barnard has an important monument to Governor Curtin to be erected at Bellefonte, Pa., the birthplace of the sculptor as well as that of the great war governor.

In "Maidenhood" modern sculpture in America, through Barnard's heart and eyes and hands, has achieved that rare and indescribable loveliness of utter simplicity, that unconscious purity and beauty which is the ultimate word of great art. In this work, as in several others, the sculptor has taken his model in an almost accidental pose. The

thing that we see in the marble as it stands is the infinite beauty which he beheld, as with eyes half closed he worked upon that mass of clay until the lines of the model and of his dream—if you will have it so—and of the plastic clay, and then the stubborn marble, became fused into one beneath his hands.

Who shall say whether he created that

beauty, or, finding it there, copied what he saw? Through him and through his power it has become a reality for us, with almost the mobility of very flesh in the texture of the marble; with the beauty of restraining and chastening power in the pure lines of the figure; and in the young girl's face, with its closed eyes, the vitality and eternity of love.

WHAT EMPLOYERS SAY OF PROFIT-SHARING

THE VARIED EXPERIENCES OF EMPLOYERS IN ALTRUISM,
ESPECIALLY IN THE GIVING OF CHRISTMAS PRESENTS—
GIFTS SOMETIMES MISUNDERSTOOD—THE SWEDISH WORK-
MEN WHO SAW THE PRESIDENT—WHAT EMPLOYEES PREFER

BY

FULLERTON L. WALDO

SUPPOSE we gave them each a turkey at Christmas time," an employer said to me—I was trying to find what employers do in the way of gifts at Christmas time or any other time to establish cordial relations with employees—"Suppose we gave them turkeys. You would hear them muttering 'We must have made a good deal of money for the firm, first and last, or their consciences wouldn't have pricked them to give us this sop.'"

This was one man's opinion. Others had different views. Some objected to discussing the question at all. "We fear," one writes, "that articles on these subjects have a tendency to encourage a spirit of unrest in the minds of those who are least entitled to such recognition." Certain conservative business houses prefer not to exploit their policy, in some cases because they desire that the charity shall be unostentatious. In other cases it may be that employers are unwilling to betray unsuccessful experiments. Inquiry as to the practice of a number of industrial concerns has elicited replies which, in some cases, touch upon the larger, but kindred, considerations of the introduction of pension systems, the division of profits, and various practicable schemes of cooperation.

The president of an important steel and iron company believes in some practicable system of cooperation, but not in the premium or gift-giving idea. The pound of tea should stand on its own merits, and the cost of the china pitcher it were better to put into improving the quality of the tea. It is not feasible, he holds, for railroads or large industrial organizations to make small gifts to their workmen because of the large number of operatives involved in any general distribution. In Germany, he points out, the government pensions the vast horde of agricultural laborers.

I talked with a chief of staff in a Sixth Avenue, New York, dry goods house employing 1,800 people, where a system of organized beneficence has been in operation for fifty years. It is a scheme of adjustment according to the deserts of the individual and the length of his or her term of service. The reward of merit frequently takes the form of vacations of several weeks; and frequently there are opportunities for travel in Europe, with expenses paid, and perhaps not much to do in the way of business. Sometimes presents of money are given; sometimes percentages of profits are divided. The giving of such percentage is the usual practice

in the case of managers of departments. In any case, what is given is known only to the giver and the recipient of the gift. Were a vote taken of the employees the result would not be in favor of a general distribution of small gifts, such as is the custom in many establishments at the Christmas season. This was the house that did not favor the giving of turkeys at Christmas.

A certain soap manufacturing company, employing 1,100 hands, has made a practice for twenty-five years of giving turkeys at Christmas to its workmen. The boys are given their choice among small articles of cutlery; and each of the girls receives a teaspoon and candy or some toilet article made by the house employing them. Foremen and chiefs of departments "receive more substantial recognition." With reference to this custom of giving turkeys, an officer of a similar—and world-famous—concern remarks: "This was probably a small matter when the custom was inaugurated, but at the present time we bull the turkey markets in one of the counties of the State. As our man who makes these purchases says, we always have young and tender turkeys because we buy up the entire crop of the neighborhood each year."

The size of a gift has little to do with its intrinsic value; and small courtesies are often much appreciated when they betoken a special thoughtfulness. This the manufacturers of certain well-known cereal food-stuffs realize. "We try to arrange our payday at that season so as to give the employees their money right up to a day or so before Christmas in order that they may have it for their Christmas shopping. We also give them, a day or so before Christmas, a half-day off, for which we give them full pay. This is done so as to give them ample time for their Christmas shopping. In the way of a little gift, we give the employees a turkey and supplies for their Christmas dinner."

A large manufacturing firm in Worcester, Massachusetts, employing many Swedes, has likewise found a managerial regard for local sentiment conducive to good feeling between operatives and employers. "Within a year or two after we became established here we adopted the custom of distributing turkeys among our employees (at Christmas time), giving everybody, man, woman or child, a good-sized turkey. For several years, also, a

Christmas entertainment was given—a portion of the expenses being paid for by us and a portion by the employees, through subscriptions. These entertainments consisted of music and acts from such talent as was found among the employees, and sometimes outside talent was employed. Often we had a dinner or a lunch either before or after the entertainment. These entertainments were always very successful and seemed to create a friendly feeling. After awhile, however, the number of employees increased to such an extent that there was no suitable place in which to have these entertainments; so we adopted the plan of having a shop picnic about Midsummer's Day, June 24th. Seventy-five or eighty per cent. of our employees are Swedish, and they make a great deal of Midsummer's Day as well as Christmas. It was, perhaps, their sentiment in regard to this, as much as anything, that led us, in the first place, to arrange for these entertainments.

"The other day, when President Roosevelt visited Worcester, he landed at the station opposite our office entrance. We erected a grandstand on the green in front of our office building large enough to accommodate seven or eight hundred people, which was just about sufficient for our employees and their families, and gave them a good opportunity to see the President . . . To show you the interest that our men took in the visit of the President, about eighty of them went out into the woods and got greens to help on the decorating, and they worked nearly all day Monday, Labor Day, making preparations. Last Christmas time they went out into the woods and gathered greens and trees and decorated the interior of the factory so that it looked very pretty. This is a Swedish custom and we think a very nice one, and we like to encourage it."

"Our problem," said a high official of the New York, New Haven & Hartford Railroad, "is not like that of a department store. The railroad runs through a great many towns, and employs many thousands of men. No system of Christmas giving on any large scale would be practicable; we would be robbing the stockholders. To introduce a system of pensioning off employees would likewise require the expenditure of what must be regarded as the stockholders' money. The cases of employees temporarily disabled or

permanently retired on account of injuries received in the service are considered separately. A question has been raised, and is now mooted in the courts, as to the legality of the Pennsylvania Railroad's embarking on a certain form of the insurance business, with a sinking fund established by contributions from the employees' wages."

The remarks of a staff officer of the New York Central Railroad were to the same effect. "The Central has no system of pensioning off veteran employees. We believe in paying a fair business wage for services rendered and letting it go at that. Instances of faithful and diligent service extending over a period of many years would be considered on their individual merits. The Delaware, Lackawanna & Western is, I believe, considering the establishment of a pension system of some sort. But we have no such scheme here. And to give Christmas presents or percentages of wages from the stockholders' money to the vast number of employees in our service is impossible."

One of the greatest of our great life insurance companies has a thorough system of pensioning off employees grown old in the harness. But to grant a percentage of profits, or of yearly salary to the army in the company's pay, is declared to be impracticable. "The money is locked up with the policies of the policy holders, and is theirs just as much as the money of the stockholders in a railway company belongs to the stockholders." The beneficence of this company to those in its employ has taken a very practical form in the establishment of a school of instruction in matters relating to the business of life insurance. A school of banking and finance has similarly been established by one of the great Wall Street banking houses, under its own roof; and a large department store in Chicago has likewise an adjunct of the same sort.

A prominent concern in Newark, New Jersey, has tried, and abandoned, the project of profit-sharing after years of experience. "I talked it over with some of the men," the president says, "and we came to the conclusion that turkeys given at Christmas and presents, given now and then in the event of their marriage, or of a funeral or something of that sort, would produce a better effect, and so our profit-sharing has really been stopped. . . . I am still in hope of turning our business into a real coöperative

concern in which the men will share not only in the profits but in the management. I think the sharing in the profits without a sharing in the management does not produce any really great benefit."

A certain large electrical company does not believe in making gifts to its operatives. It pays high wages and cares for sick or injured employees. It is considering, but has not yet adopted, a scheme of pensioning. A car manufacturing company "has always made it a point to remunerate one and all of said employees to the full extent of what they merited. . . . We have not made special consideration for them at Christmas time."

A writing machine company gives a bonus of \$100 annually to employees of at least ten years' standing—\$50 at Christmas, and the rest at vacation time. This bonus, however, is given only to those who have attained the salary limit.

To the traveling men of a Chicago house, a bonus, based on the amount of each man's sales for the year, is paid at Christmas time. This operates strictly as a reward of merit, the amount each man receives being determined by the sum total of the sales he has personally made during the year. Many of the 200 traveling men thus add from a tenth to a half to their salaries.

A conservative manufacturing establishment in Rhode Island is also of those that do not believe in specific Christmas giving. "We consider that ordinary men are better satisfied, in the long run, to have the best of wages and to know that they can obtain such wages steadily."

What is the general inference to be drawn from these various responses, indicating a wide divergence of business policy? It is, perhaps, that indicated in the opinion last quoted. Adventitious giving, unless the nature and amount of the gifts are carefully calculated according to the relative deserts of the recipients, does not in all cases result in the promotion of a cordial good will among the members of an industrial establishment. The typical American workman is ready to enter into the fruit of his labors in the shape of regularly paid and sufficient wages, considering this his just due, and willing therefrom to supply his own necessities as well as luxuries. He does not as yet, on any large scale, demand to be made a profit-sharer.

A MEANS TO EFFECTIVE ARBITRATION

BY

FREDERICK W. JOB

CHAIRMAN OF THE BOARD OF ARBITRATION OF ILLINOIS

TWENTY-FOUR States have already enacted statutes providing for the adjustment of disputes between the employer and employee. In only a very few of these States, however, has the desired end been accomplished.

In some States only \$2.00 per day is paid each member of the Board for every day he is helping to arbitrate a labor disturbance. Other States provide \$4.00 per day as a salary for such work. Where the salary is large enough to attract men of standing and ability another drawback is in the lack of methods for carrying into effect the findings of the Board.

It is believed that the amendment to the arbitration law of the State of Illinois, proposed by the present Board, and passed by the Legislature of 1901-1902, has to a great extent solved this difficulty. This amendment says in substance "that the duty of the mayors and town presidents and of the executive officers of the labor unions, in case of a strike involving more than twenty-five employees, is to communicate with the State Board of Arbitration, giving full details." And "whenever there is a strike or lockout by which the general public appears likely to suffer injury or inconvenience with respect to necessities, and neither party to the strike consents to submit the controversy to the State Board of Arbitration, the Board may proceed of its own motion to make an investigation and to make public its findings, with recommendations, and in the prosecution of the inquiry the board has power to issue subpoenas and compel the attendance and testimony of witnesses."

Prompt notification of labor troubles to the secretary of the Board by the presidents of towns and by mayors of cities throughout the State resulted, in many instances, in a quick, quiet and harmonious settlement of the difference. The presence of the Board without more than a casual inquiry and with a few recommendations has sufficed.

While the amendment was designed to cover principally the cases of employees and employers who conduct plants in which the public is interested, such as transportation companies or telephone, telegraph or lighting plants, yet that part of the amendment giving the Board authority to make investigations "whenever there shall exist a strike wherein in the judgment of a majority of the Board the general public shall appear likely to suffer injury or inconvenience . . . in any other respect," has been of incalculable benefit to us in our independent inquiries.

The unwilling party is generally represented as the case proceeds and takes a lively interest. The example of the party to a suit at law who permits it to go by default stimulates the unwilling side.

Immediately upon receiving information our Board proceeds to the scene of the dispute, and if attempts at conciliation and mediation by us fail, steps are at once taken to make a searching inquiry. Subpoenas are seldom found necessary, for the disposition to be an involuntary witness and to compel the Board to resort to the use of the subpoena is too apt to be taken as an indication of weakness. The books of the employer are usually produced and comparisons of prices of labor of manufactured goods with other competitors are shown; the cost of necessities of life, comprising clothing, rents, foodstuffs and other things, are made by the employees, which in turn are met by the employer with comparisons of freight rates of the products of the industry he is engaged in. By this careful sifting out of the essence of the controversy and by the elimination of the less difficult features a conclusion is reached.

The decisions of the Board have always been characterized as fair. With a bipartisan and non-political Board of one employer of labor, one bona fide employee and a third neither employer nor employee, the opportunity for the accusation of prejudice or politics is reduced to a minimum.

THE HEAD OF THE INTERNATIONAL SHIPPING CORPORATION

THE PERSONALITY OF CLEMENT A. GRISCOM—HOW HE PLANNED AND ACCOMPLISHED, WITH MR. MORGAN, THE GREAT COMBINATION OF SHIP-OWNING COMPANIES

BY

LAWRENCE PERRY

NOT many years ago King Leopold of Belgium was one day holding court in Brussels. Among those waiting to be presented were Clement Acton Griscom and Mrs. Griscom and the United States Minister to Belgium. Mrs. Griscom had never met the queen. The minister, recently appointed, had just arrived in Brussels, and stood directly in front of the Griscoms. When he was presented the king greeted him in his hearty way, welcomed him to Belgium, and then, suddenly breaking off, said:

"By the way, have you ever met Griscom, Clement A. Griscom? No! Well, you should; he is a rare good fellow and a great friend of mine," and the king went on with as sincere and honest a eulogy as ever man uttered. He had not noticed Mr. Griscom. All at once he caught sight of him.

"Why, hello, Griscom," he cried, his face beaming with pleasure; "what are you doing here?" And he shook his hand, an act quite beyond the pale of court etiquette.

This incident reveals the man, and furnishes a key to the secret of his success: he is popular with his fellow men. He has a way of making them like him; not because of any vacillating good nature, for he is outspoken against all shiftlessness, meanness and deceit. His ways are sharp and incisive and he likes men of those same characteristics—men who can understand thoroughly that the inch he frequently gives may not be construed into a mile. But he is a good companion; and the assurance of sympathetic, whole-hearted friendship is conveyed to the veriest stranger by a handshake and the quick glance of his eyes. As different from Mr. Griscom as the late President McKinley was, the two men may be likened in this respect—in the winning of men. Bluff, energetic, determined, forceful, he is a man who does things, and does

them thoroughly. He is a fighting man, and each victory has only opened the road to larger fields of effort crowded with apparently unsurmountable difficulties. When the International Mercantile Marine Company, better known as the Morgan Steamship Trust, was organized, Mr. Griscom's selection for the presidency was inevitable. He was the logical man for the place; for the steamship trust was his idea, his conception fifteen years ago, and his greatest ambition. It is attained now, but there is still much to do, and no one better prepared to do it than he.

Mr. Griscom was born in Philadelphia on March 15, 1841, coming of good, substantial Quaker stock dating back to William Penn. His father was a leading physician in Philadelphia with sufficient means to allow his son to select his own life work. As a boy he had no special bent, and no one seems to remember any incident of his boyhood life which might have given a hint of his future. He had no desire for college, although he has since been heard to regret that he did not have a university training. Until his sixteenth year he attended the Friends' Central High School, where he showed such proficiency as a student that on the day of his graduation Aaron Ivins, the famous old schoolmaster, offered him a position as partner in the conduct of the Friends' school. Young Griscom, whatever his bent at that time, certainly had no leanings toward pedagogy, and he entered the importing firm of Peter Wright & Sons in 1857. At once those traits which distinguished him later began to appear. He got his firm to purchase their own sailing ships, and profits increased tenfold. They admitted him to partnership when he was twenty-two years old. The firm purchased more vessels, and finally it put into operation a scheme which young Griscom had evolved in his nine-

teenth year—that of carrying oil to Europe and bringing back crockery. It was successful, and when steam came into general use steamships were added to the company. Thus Mr. Griscom's idea became the forerunner of the great Standard Oil trade. He had but one set plan for his life work—progress. But that did not necessarily mean that he must work in a rut. He saw his way clear to a certain success if he confined himself to his trading interest, but he began to foresee an even greater success in a wider field. He mastered the study of marine architecture. Soon the Society of Naval Architects and Marine Engineers was organized and he was its first president. Each successive year he has been reelected to that office. But if he began to identify himself with outside interests he did not allow that to interfere with his business. Through his efforts Peter Wright & Sons became the agents of the old American Line, then one of the greatest lines, operating the famous old steamships *Ohio*, *Indiana*, *Pennsylvania* and *Illinois*. This led to greater things, and in 1871 Mr. Griscom went to Belgium, met King Leopold, won him as he did every other man, and made contracts for forming what afterward became the Red Star Line. Combining their lines, Peter Wright & Sons became the International Navigation Company, and Mr. Griscom became one of the founders of a great power in the transatlantic trade. The greatest steamship men of the world came to be his rivals—and is not a man's greatness measured by the greatness of his rivals? They began to watch him, to copy him, but, as with Mr. Kipling's Sir Anthony Gloster, he left them a year behind, because they could not copy his mental workings. In 1886 his company purchased the Inman Line at auction in Liverpool, and here Mr. Griscom's training in marine construction came into prominence. He wanted new vessels, but he felt that new vessels with new improvements were necessary—something that would mark an epoch in shipbuilding and bring prestige to his company. And so the *City of New York* and *City of Paris* were built—twin screws, transverse bulkheads, water-tight compartments, a revolution in modern shipbuilding. They all originated with Mr. Griscom. Twin screws; no more wallowing helplessly in the sea-way with a broken shaft; no more sinking like an anvil when the hull was punctured. It was

without question the biggest step made in shipbuilding since the advent of steam. Through his energy special congressional legislation was passed granting permission for the two vessels to sail under American registry. In recognition Mr. Griscom placed orders for the construction of the next two vessels—the *St. Louis* and *St. Paul*—with an American firm. The results justified Mr. Griscom's confidence in American shipbuilders. In these two vessels Mr. Griscom developed another of his surprises—the construction of staterooms in suites. Incidentally, all four vessels, the *Paris*, *New York*, *St. Louis* and *St. Paul*, were record breakers in their days. In the war with Spain all these vessels played an active part as government cruisers. And later came the so-called steamship trust.

As president of the International Mercantile Marine Company Mr. Griscom directs vessels aggregating a tonnage almost twice as large as that of any other shipping corporation in the world. The combined tonnage of the North German Line is 1,110,000 tons; that of the Mercantile Marine 1,106,000 tons. Mr. Griscom believes that the success of the scheme rests upon the material growth and welfare of this country. The company, which will operate from every large American port, can thrive, he has said, only as the grain belt of the Northwest, the cotton belt of the South and manufacturing throughout the Eastern and Central States shall increase in productive capacity. Transportation must be conducted on a large scale. Exporters will be able to contract with this company, which will stand ready nearly every day in the year to take cargoes in large quantities at any of our large seaports and deliver them without transshipment on a fixed date at any of the great seaports of Europe. The formation of the steamship company has not been artificial. It had become a necessity. Mr. Griscom regrets that the American flag will not fly over more ships than it does. He has said that if the President and Congress will meet indisputable economic facts by legislation, some of the new steamships may be built in the United States, officered and manned by Americans, and actually become a part of our national reserve strength at sea.

Mr. Griscom matured his plans for the steamship combination when everything seemed hopeless, but he clung to them with confidence that the right day would come



From a painting by Fedor Entke

MR. CLEMENT A. GRISCOM
THE HEAD OF THE INTERNATIONAL MERCANTILE MARINE COMPANY

And it came with J. Pierpont Morgan. Mr. Morgan was the one man needed, and with the vital assistance of Mr. Griscom's practical knowledge and ability and acumen the Morgan Steamship Trust came to startle the world.

But the man. Mr. Griscom is essentially a family man. He has a town house in Philadelphia, but most of the time he lives in his country home, "Dolobron," in Haverford, near Philadelphia. Here he frees himself of business cares. He keeps open house, and, being a natural entertainer, he is never so happy as when his house is filled with guests. His office is in Philadelphia, but he spends two days of each week in New York. Mr. Griscom is fond of pool and billiards and plays a great deal in his house, although he is no expert at either. In art he is something of a connoisseur, and he has gathered a splendid collection, the majority being important examples of the Barbizon school of painters—Corot being especially in evidence. Two or three months each year he spends in Europe and is on friendly terms with many emperors and kings. He was recently a guest for a day on the Emperor William's yacht at Kiel. The Kaiser rather admires men who put him on his mettle; he is proud of the two great German lines, and he likes to know what kind of Americans are competing evenly with them. Mr. Griscom owns a stock farm near his country place and he knows a good horse when he sees one; he is fond of shooting and owns quail lands in Florida, and he is an enthusiastic yachtsman, owning the large steam yacht *Alvena*.

Notwithstanding the vast responsibilities of his steamship enterprises, Mr. Griscom is active in many other lines. He is a director of the Pennsylvania Railroad, the Bank of North America, the United States Steel Corporation, Atlantic Mutual Insurance Company, Fidelity Trust and Safe Deposit Company, and some twenty or more other enterprises. He was also one of the organizers of the National Transit Company, and its president for several years. In 1889 Mr. Griscom was a delegate to the National Maritime Conference for revising the "Rules of the Road at Sea," at which twenty-eight nations were represented. He is an honorary member of the British Society of Naval Architects, an honor conferred on but three others at the time—the Grand Duke Constantine of Russia, Lord Kelvin of

England and DeLome of Spain. The Queen of Holland conferred the decoration of Knight of the Order of Orange-Nassau upon Mr. Griscom in recognition of the perfect discipline established upon the steamships of the International Navigation Company. The particular occasion of this was the rescue by the crew of the American Line steamship *St. Louis* of the passengers and crew from a disabled Dutch transatlantic steamship, which sank shortly after the last boatload had left the wreck. He has also a Belgium decoration, and he received recently from the French government the decoration of Chevalier of the Legion of Honor. Mr. Griscom is a member of many clubs in New York, Philadelphia, Chicago and London.

How he finds time for all his varied interests is a problem indeed. A business associate recently said that Mr. Griscom's success is due to his immense capacity for work. In the past month, for instance, he has been at his desk eighteen hours a day, tiring out three relays of clerks.

And his influence in politics is marked. He is said to know more men and to have more influence with them than any other man in the country. When the last Republican Presidential Convention (the convention which nominated Mr. McKinley), in session at Philadelphia, was torn with strife over the nomination for Vice-President, Mr. Griscom stepped in and invited the leaders to his home "to talk it over." When they left there was perfect amity. It is in this mediatory capacity that politicians think of Mr. Griscom. "He is a real man!" some one said not long ago; "he tells a good story, and, what is perhaps better, he enjoys hearing one. He gives good dinners, he is a capital host, and he makes a rattling speech."

His hair is white now, and so is his heavy mustache; his dark eyes gleam from under heavy gray brows, and his cheeks with their high color make him conspicuous anywhere. Heavily built, with broad shoulders, he is apparently in the prime of his vigor. You can read the whole story by just seeing and talking to him—the dominant personality is there; he is genial, yet you take no advantage of it; he is kindly, but his eyes can grow hard upon necessity.

And he is not through surprising the world. He is still the personification of the strenuous life—the typical American captain of industry.



Photographed by J. P. Selah

SUBDUING THE NILE

THE CROWNING WORK OF THE ENGLISH OCCUPATION OF EGYPT—
BUILDING THE ASSOUAN DAM IN A ROARING CATARACT—A WONDER-
FUL FEAT OF ENGINEERING—HOW IT WILL REGULATE THE TRADI-
TIONAL FLOOD AND THEREBY INCREASE THE WEALTH OF EGYPT

BY

CHALMERS ROBERTS

Illustrated from photographs by D. S. George and others

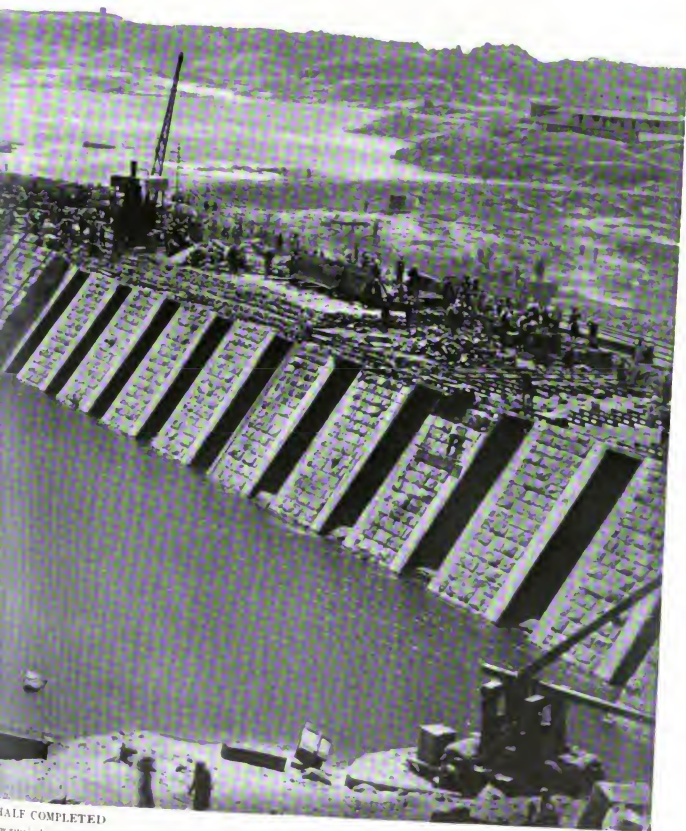
THE wonderful success which has so far attended the British occupation of Egypt in the financial, educational, hygienic, military and also the general political branches of the government is to be extended to its great engineering schemes. The new Egypt, whose rise has been so strange and unexpected, is about to leave a record as monumental and material as any for which old Egypt is famous. And this achievement in its manifold phases has come under the supervision and should lie to the credit of the man who has made modern Egypt what it is. In a recent address upon the great dam at Assouan, the constructing engineer, Sir Benjamin Baker, said, "When the rotten rock in the bed of the river was first discovered I told Lord Cromer frankly that I could

not say what the extra cost or time involved by this and other unforeseen conditions would be, and that all I could say was that, however bad the conditions, the job would be done. He replied that he must be satisfied with this assurance and would say that the dam had to be completed whatever the time and cost. With such a strong man at the head of affairs, both engineers and contractors—who are often suffering more anxiety than they care to show—are encouraged, and works however difficult have a habit of getting completed, and sometimes, as in the present case, in less than the original contract time."

The world, which has always heard of the granaries of Egypt, seldom realizes that the 400,000 square miles of Egypt are, all but 10,500 square miles, arid desert. The narrow



THE ASSOUAN
The flow of water is



HALF COMPLETED
by gates in the apertures



Photographed by Benktis

THE TRADITIONAL IRRIGATION METHOD

For centuries the Egyptians have raised water from the Nile with primitive wheels

ribbon-like strip of arable land upon either side of the Nile is barely as large as Vermont and Rhode Island put together. A visitor to Egypt can see directly across the whole of the cultivated land from the edge of the desert on one side to great opalescent sandhills on the other. For years engineers in the Khedivial service, particularly the engineers of the English occupation, have urged the building of reservoirs that would

poses, or indeed for a permanent reservoir, had ever been made on a river the size of the Nile. This, too, was to be both a dam, a bridge and a waterway—a rare and difficult combination. It would be useless to try to confine the Nile in flood, and therefore the river must have right of way to run unimpeded through the dam during several months of the year. The dam is for use when the flood subsides but while it is still too high for



THE MODERN IRRIGATION METHOD
English and native workmen building the Assouan dam

give a system of irrigation to Egypt not wholly dependent upon the uncertain Nile floods. It was agreed that the natural advantages of the Assouan site, six hundred miles above Cairo, with its bed of granite beneath the river, the high granite banks on either side and the inexhaustible supply of stone near by, offered advantages not equaled elsewhere. The plans which were soon made were unique. No dam for irrigation pur-

irrigation purposes. The dam will hold the water for use in the parching summer. Therefore the structure has been divided into a large number of piers, with openings that can be closed at will by gates. Each pier must be capable of supporting its own weight and the pressure of water against the adjoining sluice gates, and the piers must be able to pass the torrent without damage. As the velocity of the escaping flood water will be



ONE OF THE MANY SLUICES

very great, the piers are enormously massive. Locks for steamers and other craft navigating the Nile are nearing completion on the west side. Already camel trains and desert caravans are marching over the broad top of the dam, and on December 9th the Duke of Connaught will formally open the dam.

As the particles of soil contributed to the river by the wash of the mountains and hills in Abyssinia enrich the fields, the dam is so designed that the water released daily for irrigation will be drawn from near the

bottom of the reservoir. Egyptian farmers ask always for "red water"—far richer as a fertilizer than clear water. In the autumn, after the silt-laden water has passed, the sluice gates will be closed gradually until the reservoir is full. This will be in January and February. From April to the end of August, when the Nile runs low and the demand for water for the crops is at its highest, the gates will be systematically opened and the summer supply of the river supplemented by stored water from the dam.

It is estimated that this irrigation will add 2,500 square miles of arable land to Egypt, and that the permanent benefit resulting will reach \$100,000,000. There will be added to the revenue from the sale of water and from taxation on the irrigated lands £2,000,000. The government will further realize considerable sums from the sale of reclaimed public lands and indirect revenues traceable to the country's augmented producing capacity. Egypt is virtually rainless, but wherever the Nile water can be regularly supplied to the soil the most bountiful crops follow, which like cotton and sugar command high prices because of their excellence. With a reliable water supply, farming in Egypt can be pursued with practically certain success.



THE DAM HALF BUILT

Four or five hundredweight of long staple cotton per acre may be expected, which, owing to its excellence, easily sells for two cents a pound more than American cotton sells for, which in its turn does not average two hundredweight to the acre. Even with the general depression of sugar in the world's markets Egyptian agriculture is confident of obtaining similar advantages for its cane products.

It is very difficult to bring to the average mind any comprehension of the magnitude of this scheme. It is useless to tell most people that the reservoir at Assouan will contain 1,000,000,000 tons of water. This reservoir, according to Sir Benjamin Baker, will hold more than enough water to make one year's full domestic supply to every city, town and village in the United Kingdom with its 42,000,000 inhabitants. During the three or four summer months when the Nile is low and the needs of cultivators are greatest the flow from the reservoir will be equivalent to a river double the size of the Thames in mean annual flood condition. No one who has ever seen the century-old irrigation machines along the Nile by which the water is lifted on a bucket and pole system, or by an oxen-driven chain of buckets, can fail to recognize the advantage of this increase in water supply. The watering of an acre of land means raising by manual power about 400 tons of water to varying heights up to twenty-five feet. Four or five waterings are required to raise a summer crop. The great Nile reservoir and dam at Assouan, the Barrage at Assiut, and various supplementary distributing canals are designed to supply in summer a larger volume of water at a higher level in the canal, so that not only can more land be irrigated, but labor in lifting water will be saved.

The total length of the dam at Assouan is about one and one-quarter miles; the maximum height from foundation is about 130 feet; the difference of level of water above and below is 67 feet; and the total weight of masonry over 1,000,000 tons. Navigation is provided for by a ladder of four locks, each 260 feet long by 32 feet wide. No practical man standing on the edge of one of the cataract channels, hearing and seeing the apparently irresistible torrent of foaming water thundering down, would regard the putting in of foundations to a depth of forty feet below the bed of the cataract in the short

season available each year as anything but an appalling undertaking. On February 12, 1899, when the foundation stone of the dam was laid, it was planned that the work should be completed by July 1, 1903. It is greatly to the credit of the contractors, Sir John Aird & Company, that they have finished before the contract time. The dam is built of granite ashlar, much of which has been quarried from the Assouan side of the river, coming from the same ledges that furnished the obelisks now standing in London, New York and Paris.

The government let the contract for this work without advancing a single pound—a testimonial to the soundness of Egyptian finances. After the work is completed they are to receive \$800,000 a year for thirty years, aggregating about \$24,000,000. This is a long credit, and its present actuarial value cannot be much in excess of \$10,000,000. Indirectly, the fact that English capital has furnished the money, and that English engineers, surveyors and contractors have carried out the work, points to Great Britain's intention to retain indefinitely her present position upon the banks of the Nile.

Here will be created in the heart of the African desert a lake having two or three times the superficial area of Lake Geneva in Switzerland and throwing back water for a distance of 140 miles, crossing the Tropic of Cancer and extended a goodly step on the way to Wady Halfa. It will be controlled by scientific precision, so that the impounded flood may be turned into distant channels at will. The engineers have estimated the exact cost of the dam, and have computed almost to the gallon the volume of water that will be imprisoned and the necessary resistance to be provided at every point of the masonry. In Cairo the experts of the Ministries of Public Works and Finance have calculated to a nicety the sum from taxation that will come into the public treasury through augmented productiveness.

Subordinate to the great dam a smaller one, not unlike the Barrage at the apex of the Delta, ten miles to the north of Cairo, is to be made at Assiut, to give a sufficient head to force water into the system of irrigation canals that water thousands of acres between Assiut and Cairo. The completion of the old Barrage above Cairo (it was begun by Mehemet Ali Pasha from the plans of a

French engineer, but was not made effective till England took the country in hand) so developed the cotton culture as to add to the public revenue of the country at least \$10,000,000 annually. It may be safely concluded, therefore, that the Assouan reservoir is but one of a series that will be constructed southward to Lake Victoria Nyanza.

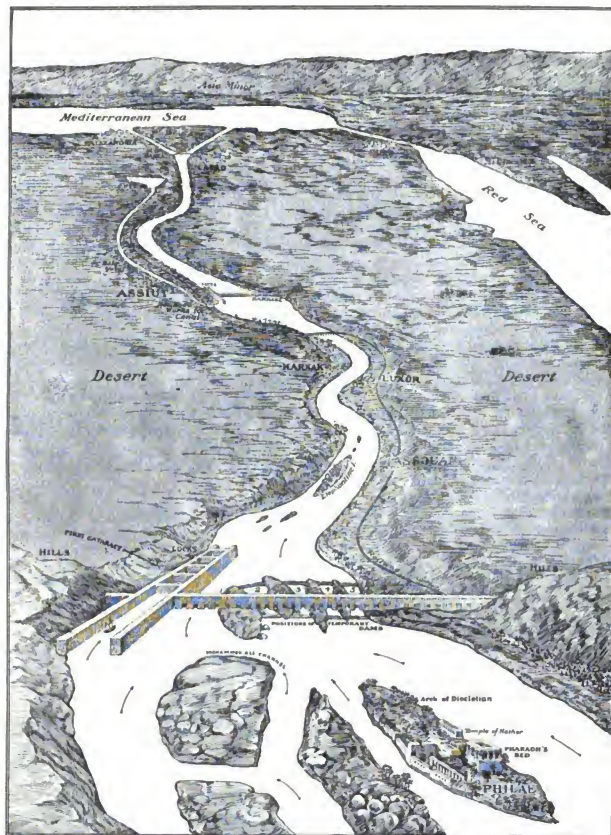
Mr. Frederick Penfield, former United States Consul General in Cairo, who has become such an authority upon Egyptian subjects, says of the enterprise: "Successful in an unexpected degree in augmenting the population of the ancient land of the Pharaohs by enforcing hygienic measures, the British administrators at Cairo are recognizing the necessity for proportionately increasing the area of 'practical' Egypt. When the British occupation began Egypt's population was about 7,000,000. According to an official census just completed (1899), it has risen to 9,750,000, as the result of the caring for child life and teaching the common people to observe rational rules of cleanliness and order. According to this census, practical Egypt has a population of 928 to the square mile, a density far in excess of any European country, even Belgium, and not to be equaled outside of Asiatic communities. It will no doubt surprise most readers to be told that a fair estimate of the value of Egypt's 10,500 square miles of cultivable territory is \$115 an acre. It is a fact as well that the foreign bonded indebtedness, naturally based upon the intrinsic value of the country, averages \$75.75 per acre, while the per capita proportion of the external debt burden is no less than \$52.20. The average land tax of Egypt is something in excess of \$4.00 per acre. These vital statistics are mentioned to reflect in its fullest importance what the building of the great dam at Assouan means to the people of Egypt and their European creditors."

It cannot be definitely stated who first planned this reservoir. Mr. Wilcocks, one of the ablest engineers of the Public Works Department of Egypt, who was instructed by Sir William Garstin to survey various suggested sites for the dam between Cairo and Wady Halfa, unhesitatingly decided that the Assouan site was the best, and the majority of the International Commission who visited the sites in 1894 agreed. But Sir Samuel Baker, more than forty years ago, had anticipated their conclusion. The single dam pro-

posed by him is in effect the one now on the point of completion. Mr. Wilcocks' original design consisted practically of a group of independent dams, curved on plan, the arrangement differing considerably from that of the executed work. The single dam, one and one-quarter miles long, constitutes a more imposing work than a series of detached dams, and could be more easily built; and, further, a straight dam is better able to resist temperature stresses from the extreme heat without cracking. There are 180 openings, all twenty-three feet high by six inches wide, which can let out 15,000 tons of water a second. Contrary to original reports of a sound rock bottom, the rock proved very unsound in many places, necessitating foundations sometimes more than forty feet deeper than was originally anticipated. As the thickness of the dam is nearly one hundred feet at the base, this misapprehension involved a very large increase in the contract quantity and cost of the granite masonry.

To put in the foundation across the roaring cataract channels, temporary rubble dams were built across the rear of the channel below the site of the great dam, so as to get a pond of comparatively still water to work in. Stones from one to twelve tons in weight were tipped into the cataract until finally a rubble mound appeared above the surface of the water. The first channel was successfully closed on May 17, 1899, the depth being about thirty feet and the velocity of current nearly fifteen miles an hour. In the case of another channel the closing had to be helped by tipping in freight cars, loaded with heavy stones and bound together with wire ropes, making a mass of about fifty tons to resist displacement by the torrent.

These rubble dams were well tested when the high flood ran over them; and when work was resumed in the following November, on the fall of the river, watertight sand-bag dams or sudds were made around the site of the dam foundation in the still waters above the rubble dams, and pumps were fixed to lay dry most of the river. This was the exciting moment, for no one could predict whether the thing could be done. Twenty-four 12-inch centrifugal pumps were provided to deal with one small channel; but happily the sand-bags and gravel and sand embankments staunched the fissures in the rocks and interstices between the great boulders



MAP SHOWING THE ASSOAN DAM

covering the bottom of this channel, and a couple of 12-inch pumps sufficed.

There was great pressure at times to get a section completed before the inevitable rise of the Nile, and as much as 3,600 tons of masonry were executed in one day, chiefly at one point in the dam. The maximum number of men employed was 11,000, of whom 1,000 were European masons and other skilled men.

When the International Commission in 1894 recommended the construction of the reservoir, Sir Benjamin Baker was desirous of knowing what would be the opinion of a real old-fashioned native land-owner. He was introduced to one—a descendant of the prophet, very rich, who had been twice warned by the government that he would probably be hanged if the bodies of any more of his servants with whom he had quarreled were found floating in the Nile. He was a very stout old man, and between paroxysms of bronchial coughing he assured Sir Benjamin that there could be nothing in the project of a Nile reservoir or it would have been built at least 4,000 years ago. In striking contrast to this, Sir Benjamin quotes the most modern and enlightened of all the rulers of Egypt, the present Khedive, who, when visiting the dam, said that he was proud that the great work was being carried out during his reign.

The old system of irrigation was little more than a high Nile flooding of areas or basins surrounded by embankments. Less than one hundred years ago perennial irrigation was first attempted by cutting deep canals to convey the water to the land when the Nile was at its low summer level. When the Nile rose these canals had to be blocked by temporary earthen dams, or the current would have wrought destruction. As a result, they silted up and had to be cleared of many millions of tons of mud each year by enforced labor, resulting in misery and extortion. It was only half a century ago that the first serious attempt to improve matters was made by the construction of the celebrated Barrage at the apex of the Delta.

The old sheik and his contemporaries may well look with wonder upon the work which modern engineers have done. There is a legend that the yearly flooding of the Nile is caused by the tears shed by Isis over the tomb of Osiris, and the question has for uncounted centuries been asked, as a type of

impossibility, "Can man arrest the tears of Isis as they flow?" One of the last incidents told in the life of Cecil Rhodes pictures him last Christmas riding across the hot and dusty desert between Assouan and the Nile reservoir works. Glancing round at the apparently limitless desert on all sides, the hills and valleys, beautiful in form but doomed for all time to remain of uniform burnt-brick hue, bare of trees, and of the many-colored growths that adorn a rainy country, he said: "After all there is no climate like England's; and as for the rain there, it does its good work and it really hurts nobody."

There is in all this triumph of utilitarianism one note of objection and complaint. Between December and May, when the reservoir is full, the famous island of Philae will in places be slightly flooded. Therefore the tourist and the archaeologist and the artist do not celebrate the completion of the dam with the same enthusiasm as the workaday world. Even if they acknowledged it as the greatest engineering feat of modern times, they yet deplore the partial obliteration of what is generally held to be the most beautiful spot on the Nile. A valiant fight was made for Philae before the first stone of the giant wall which now spans the river was made. Engineers reported that Philae would be swamped completely; thereupon the archaeologists, the tourists, and the artists rose to object. Monumental petitions were signed and all manner of recommendations were made for the protection of these beautiful ruins. In compliance with the prayers of these agitators, the contractors modified their plans with a view to keeping the chief monuments of Philae above the water. The chief fear was felt for "Pharaoh's Bed," the beautiful pavilion built for Augustus but completed by Trajan, for it is mainly built upon a terrace of Nile mud and may crumble. To obviate this risk, all of the important parts, including this kiosk, have been carried on steel girders or underpinned down to rock, or, failing that, to the present saturation level. Archaeologists have not at all been reassured by the precautions which the contractors have taken. But even should the cost be complete obliteration of these famous monuments, who can say that the price is too high or the sacrifice unwise? A link with ancient Egypt may disappear, but a new state will be carved from the wastes of the desert.

REORGANIZING INDUSTRIES: A NOVEL PROFESSION

GREAT FACTORIES STUDIED BY A PRODUCTION ENGINEER WHO
INSTALLS ECONOMICAL METHODS—A MILL WHICH INCREASED
PRODUCTION FORTY PER CENT.—THE STORY OF THE PIONEER EXPERT

BY

MINNA C. SMITH

AN important Pennsylvania manufacturing firm, discontented with their condition, invited a man from New York to inspect their plant. He went. He had access to the private records, to the most secret information of the firm. He studied the economy of the mills. He watched the men at work. He asked questions. For weeks the study went on. And when it was finished, he was asked to suggest improvements. He was the first production engineer, an expert industrial critic, who had given the plant the attention a trainer might give an athlete preparing for a race. As a result of his report, the methods of manufacture in the plant were radically changed.

Sixty tons of material had been handled daily fifty-one times. By changing the course of the material through its various processes, the engineer cut down the handling to thirty-seven times, with a resultant saving that surprised the president, the directors and the general manager. They were men who knew their business, but they had had no idea that any outside help could so reduce their expenses. Thus production engineering, the youngest of the applied sciences, received recognition.

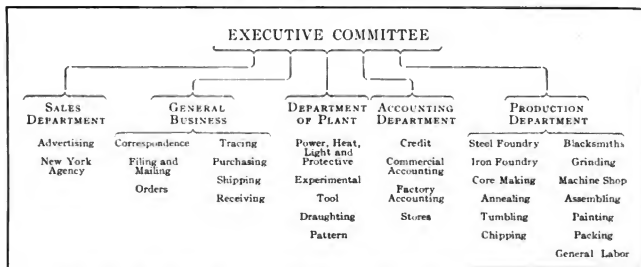
The production engineer was requested to rearrange the schedule of wages at a steel mill. When he regulated it, not by tonnage alone, but by groups of steel products according to quantities and shapes, the resultant rates increased the productive capacity of the mills from five to forty per cent., decreased the cost of production and increased the wages of the men.

He was called to an electric equipment factory which was growing so fast that its managers not only did not know the amount of their expenses, either in total or in indirect

costs, but could not keep in touch with the general routine of the days. The expert asked questions and was given full details. He was introduced to every official, every head of department, every clerk; and he asked each one for typewritten suggestions. He found that the huge physical growth of the factory had overtopped its intellectual and nervous organization. The organization needed a clear definition of duties and responsibilities in the various offices—a more highly organized faculty. The specialist reported a special system, unified, yet so flexible that the work in any department can now be expanded or contracted without affecting the general plan. Thirty-one departments of the executive and operating force were ordered, instead of fourteen. There could henceforth be no clashing of authority, no men receiving one order from one department and another order from another. All communications about the general organization were authorized to appear in executive orders from the president of the company, who is also general manager. The names of all officers, or heads of departments, were put at the head of every executive order, and each head of a department was made responsible for notifying his associates, who in turn were made personally responsible to him. A series of executive notices was posted insuring order of a high degree and making certain the prompt return of all reports and data. One man was made responsible for all the accounts of the company, so that uniformity might be developed in recording all the performances of the plant. The authority for giving orders was centralized. Provisions were made for definite recording of orders for material; and complete and accurate means of communication within the factory were insured. An accurate

system of labor records for all employees was effected, insuring the charging of material and labor expended in the course of production. Centralization of authority stopped overstocking. The control of incoming and outgoing material was given to the same central authority. The chart shows a typical factory organization:

CHART OF RESPONSIBILITIES



A full chart would contain beneath each of those departments the name of the man held responsible for the working of that department—thirty-one men besides the five managers who make the executive committee.

The nervous system of an industry is composed of records. The nervous system of the electric equipment factory was toned up. The factory is making its product much more rapidly than before; and despite the growth of the business the heads of the concern can now keep in touch with all its details.

James Newton Gunn, the pioneer in this novel profession, says that the production engineer conceives of a well-equipped factory as a man trained for his many duties, skilled in many ways, who has each member of his body developed and working in harmony with the others—all controlled by the intellect. The factory intellect must have a system of records and machines and men, serving as the nerves, bones and muscles. Cost-keeping, which is synonymous with maintaining the nervous system, has been found to be a function which an outside man of professional standing and unquestioned integrity can serviceably fulfil.

Mr. Gunn is convinced that impartial scientific investigation of *all the facts* of any business and the solving of the problem of cost must make clear the economic relations

of the investor and the laborer. An employer, knowing the productiveness of individual workmen, has a basis for increasing pay for better work. An absolutely accurate system of cost is the only means for showing accurate current earnings. Manufacturers will be able to let men earn more when with increase of output there is no increase of fixed charges,

for both capital and labor suffer from ignorance. Here the production engineer becomes useful. His business is scientifically to make a producing unit of any business, whether manufacturing, mining or other productive industry.

Weekly conferences of all heads of departments, and often in times of rush daily meetings of foremen, are part of the harmonious working of the principle. Every workman is constantly represented in conferences with the heads of the business. A minor foreman has been known to come to five weekly conferences in succession before he took his turn to say his say. It takes time for such a man to realize that his trained knowledge is considered of commercial value in conference. The whole system tends toward social ends, toward the introduction of souls into corporations.

But who is Mr. Gunn? How did he become a production engineer? He was born in Ohio. After he was graduated from the high school at Springfield he went to work in a factory there that made portable forges and grinding machinery. The president of the

company encouraged the young man to develop any ideas that came to him in the work of the factory. He worked over a system of piece rates on forges, he assembled costs, he systematized the orders and gathered the expense items of the factory on cards. Soon the boy was able, on the cards he cut out and wrote upon, to show the exact cost of each article manufactured, collating all the items of indirect expense. He counted window-cleaning and postage stamps, repairs and the work of carrying material around in the shop, into the cost of producing a forge. He was at work in the glimmerings of his first great idea. He proved the possibility of absolutely accurate distribution of every item of indirect expense. Next he had an opportunity as cashier of a Southern railway system to formulate ideas regarding the workings of a railway organization. He had begun to mature ideas showing the scope of the use of cards of varying contours for recording facts, the now familiar tab cards, which he presently patented. In 1893 he

went with his tab cards to Boston and later to London for the Library Bureau. This gave him a chance to study manufacturing methods in England and France. When he returned he introduced cards in the assembling of labor and material costs in large factories, and thus came to know more fully the practices in American factories. He was soon able to suggest to one factory an improvement in methods learned in some other factory whose manufactures were entirely different, for the solution of a problem having to do with manufacturing leather belts would sometimes suggest the solution of a problem in rolling bars of steel; the grouping of orders by sizes which had resulted in a twenty-five per cent. increase in the capacity of a steel foundry suggested the solution of a problem in the distribution of work to different looms and the multitudinous orders for different patterns in a silk mill. He came to understand methods and management as a whole, and he was and is, as a production engineer must be, an open-minded student of economics.

THE TRAVELING POST-OFFICE

THE SUGGESTION OF IT BY A MOUSE'S NEST—
THE REVOLUTION IT HAS CAUSED IN THE
HANDLING OF MAIL MATTER — THE LOYALTY
AND PLUCK OF THE MEN IN THE SERVICE

BY

FORREST CRISSEY

Illustrated from photographs by Allen Ayrauet Green

GREEN BAY, in the Lake Superior region, was an important distributing point on the old postal route, and its post-office was often crowded with mail pouches, the contents of which must be rehandled and sent forward to the tributary towns in the heart of the wild northern country. Sometimes weeks were required to repouch the glut of mail which accumulated at the Green Bay office, and the inland hamlets were compelled to await the slow process of forwarding which the inadequate method of rehandling involved. One day the dog team which hauled the mail from Green Bay to the little settlement of Ontonagon was unloaded at the latter destination and the

pouches unlocked. Among the letters which were tumbled out upon the distributing table were a mother mouse and a litter of young!

Almost a month later Maurice Crean, route agent, told this story to George B. Armstrong, then assistant postmaster of the Chicago post-office. Mr. Armstrong laughed heartily at the incident, then grew suddenly thoughtful and remarked:

"Something must be done to move the mails faster—so fast that mice cannot make their homes in the pouches and raise their families there while in transit. It will not do to have the mails turned into mouse nests. I am going to devise a plan which will do away with such a possibility."

As a mere passing measure, the foot messengers with dog sleds were supplanted by mounted horsemen; but from the moment when Mr. Armstrong heard the story of the mice in the Ontonagon mail pouch, in 1856, until he had devised and perfected the railway postal system, he made its problems the chief concern of his life.

Today the famous Burlington fast-mail train, the "greyhound" of the service, is composed exclusively of mail cars, generally six in number, and these sometimes carry as much as 150 tons of letters, papers and parcels—the equivalent in weight of 2,100 persons, or the number of passengers ordinarily carried in forty-two coaches. Contrast this burden with the volume of mail which passed across the continent under the surveillance of the route agent of ante-bellum days and the stride of the service is more easily appreciated. The distance from Burlington, Iowa, to Chicago, 205 miles, has been covered in 188.5 minutes, or an average speed of 65.5 miles an hour. The highest fast-mail speed for a short distance recognized by the official records is an average of 75 miles an hour for 32.5 miles, between Bristol and Meriden, Connecticut. This run was made May 1, 1900. For still shorter distances an average of 85.5 miles an hour has repeatedly been made.

Resting in a small iron box in the office of George B. Armstrong, Jr., are a score or more of precious documents from the pioneers of the Railway Mail Service. In the lines of these narratives may be traced every step in the development of the present highly perfected system which gives employment to more than 10,000 men and is expanding at a marvelous rate under our national prosperity. It is the expectation of the department that before the close of the next five years the payroll of the Railway Mail Service will contain the names of 13,500 employees.

Both the Civil War and the war with Spain exerted a powerful influence on the Railway Mail Service of the United States. Undoubtedly the great blockade of soldier mail in the sixties made the necessity so great that not only did it move Mr. Armstrong to focus his ideas into a thoroughly practical plan, but also enforced upon the official ears of those in authority at Washington the fact that radical steps must be taken to facilitate the handling of the mails, for soldiers in camp, and women and children waiting at home for news from

the battlefield, the bivouac and the hospital, were equally impatient at delays. Tons of letters were handled in the main distributing offices every week, and tons of papers were heaped up never to be redistributed and sent forward. A clerk employed in the Chicago office at that time has left a written statement that "the vast surplus of mail accumulated in the distributing department of our office during the months of December, 1863, and January and February, 1864, was estimated to be 500,000 letters."

Mr. Crean relates that at the outbreak of the Civil War he was sent to take charge of the "western room" at the Cairo post-office, which had been made a "distributing station," because of the great volume of army and navy mails centering there for the western military forces. During the four weeks when army movements made this the most important office in the State, Mr. Armstrong spent all his time in Cairo working out the advance steps which led him to complete the "traveling post-office." He worked day and night, but seemed never too tired to be enthusiastic, and he "spent many a sleepless night in his room in the St. Charles Hotel elaborating his plans." These he perfected "so completely that a letter mailed in Chicago for any one of the western or southwestern armies reached its terminal point as soon as a passenger on the fleetest Pullman could reach it; so that a letter for Admiral Porter in the War Department in Washington was made up in the Chicago distributing post-office in a separate pouch and reached his flagship by way of the Illinois Central road as soon as the Admiral's gunner himself could have reached him from this city." This he did by a series of direct pouchings, avoiding as much as possible the intermediate services at distributing post-offices.

Mr. George B. Armstrong, Jr., his father's first amanuensis, in recounting the obstacles against which the founder contended in securing the confidence and support of the public and the department, writes that "the business men of Chicago, with many of whom my father had frequent conferences, could not see how the benefits of the plan would offset the risk of losing the letters while in transit." He also relates that three letters written under dates of May 10th, May 14th and June 10, 1864, and addressed to the Third Assistant Postmaster-General, were the corner-



THROWING LETTERS INTO THE LETTER CASE ON THE FAST MAIL

stones of the system, as they covered the entire field of postal reform, urged the abolition of "post billing" and of "wrapping," and so ably set forth the advantages of the traveling post-office that the business men and the Department at Washington were aroused. The energy with which Mr. Armstrong pursued his campaign is interestingly attested in a document written by James H. McCausland, in which this gentleman states that, although a quarrel with men in political power resulted in deposing him from a position of route agent, Mr. Armstrong engaged him to do missionary work among railway presidents and officials in behalf of the traveling post-office. "I believe to this day," writes Mr. McCausland, "that he paid me out of his own pocket, for I am quite sure that he had no authority from the government to employ me." One of the most significant and notable orders ever issued by the department was that which Postmaster-General Montgomery Blair sent out, dated July 11, 1864, giving Mr. Armstrong authority to have an experimental traveling post-office equipped and operated. Mr. George L. Dunlap, then General Manager of the Chicago and Northwestern Railway,

was the only railway man who showed a friendly interest in this scheme and did not condemn it without trial. Through his interest an unused baggage car was equipped with a rude table and "letter case." The latter, as at first designed by Mr. Armstrong, was circular in form. Asa F. Bradley, the route agent selected by the founder of the service as the first chief clerk of a traveling post-office, suggested that the case be angular instead of circular, as the eye could more readily locate the various boxes under this arrangement. His experience as a surveyor told him this. The change was immediately made in the design and a serious defect avoided.

The first traveling post-office made its initial trip over the run from Chicago to Clinton, Iowa, about September 1, 1864. Its crew consisted of Asa F. Bradley, Percy A. Leonard and James Converse; the first handled the papers and Mr. Converse the letters. Of that historic run Mr. Leonard has left the following record:

"The letters were stacked up in a generous pile on the case. The principal stations only had been put in separate packages. The first series of stations, Austin, etc., were put in

a package numbered one. Distribution began about an hour before the train was due to leave, but because the arrangement of the boxes was somewhat strange to the distributor, he carried a few letters past some of the nearer stations on the first trip.

"It required but a few trips, however, to demonstrate the immediate success of the scheme, and soon arrangements were perfected for introducing the system on all the railway lines leading out of Chicago, more particularly those running east and west. It was, however, the summer of 1865 before the railway post-office system received the official sanction of the department, and it was introduced on the Northwestern, Rock Island, Burlington, Michigan Southern, Fort Wayne and Michigan Central railroads in the order named.

"In the spring of 1868, when the completion of the Union Pacific made an overland mail feasible, two sets of clerks were put on the Rock Island road, one of which handled the California and overland mails exclusively and the other the local mails between Chicago and Davenport, Iowa. This required an entire car, something like the present postal cars, and greatly enlarged the sphere of the railway post-office. From this small, crude beginning has grown the present gigantic railway mail service."

Perhaps the first significant step forward, after the installation of the "traveling post-office," was the invention of the "express mail" by Mail Clerk S. F. Champion.

The people at Lockport, Illinois, had asked him to send their mail on an accommodation train from Chicago; and Lemont, eight miles north of Lockport, asked a similar privilege. It could not be granted. He arranged accordingly to have the Lemont mail sent in the Lockport pouch, and at Lockport transferred to a train running back to Lemont, thus putting a mail into that town which otherwise would not have reached there until the next morning. "A few days later," says Mr. Champion, "Mr. Armstrong slapped me heartily on the back and exclaimed: 'Champion, you've given me a good idea. Make me a list of all the offices on your run where the mail trains meet the express trains.' Within twenty-four hours the 'express mail' was born and continued until night service took its place."

For some time after the installation of the Railway Postal Service it was the practice to



READY TO SNATCH A SACK WITHOUT STOPPING

accompany each package of letters with a "post bill" or memorandum of its contents, classified as paid, unpaid and free matter. These bills were made out in duplicate, the original accompanying the package to its destination while the duplicate was sent to Washington. This was on the theory that the postmaster or mail clerk opening the



POUCHING THE LETTERS



A "FAST MAIL" IN ILLINOIS



CATCHING THE MAIL SACKS FOR A QUICK TRANSFER

package would check off the letters and then forward the bill to the department at Washington to be compared with the duplicate. Tons of these bills accumulated at headquarters and were destroyed without any attempt at their comparison. This was before the days of the prepayment of postage. Under the Act of March 3, 1863, prepayment of postage was required by means of postage stamps affixed, which naturally did away with the "post bill."

Even more burdensome was the system of wrapping each package of letters in brown paper and readdressing it to the post-office of destination. If the package consisted of one letter only it was not permitted to go forward without its wrappings. Each car was obliged to carry huge stacks of this manila paper, and the mail clerks stood knee-deep in the wrappings from opened packages. Here was another dead weight upon the service which Mr. Armstrong at once detected and abolished, substituting the present system of tying letters for the same destination into a neat package with a plainly addressed envelope uppermost.

In a document written by James E. Stuart, an inspector in the Post-Office Department, is an account of how the modern "route scheme" was introduced into the service.

"In those days," writes Mr. Stuart, "no schemes of distribution were furnished as at present. Each clerk secured for himself an alphabetical list of post-offices, and opposite each office he would mark the route it should be 'thrown to' from his own line. There was, therefore, no systematized scheme governing the distribution of mail matter. Experience quickly demonstrated the value of the route scheme and soon thereafter others were prepared for the various States and finally the official scheme book was adopted by the department."

This volume is upon the distributing table of every railway mail clerk and may be described as his "city directory," for it enables him instantly to locate any post-office in a given State and informs him of the various routes by which it may be reached.

"The facing slip," continues Mr. Stuart's narrative, "now used to test the efficiency of each clerk and to enable a record to be kept of all errors in distribution, was the outgrowth of an experiment of my own. While I was a postal clerk on the line from Boone to Council Bluffs I conceived the idea of placing a slip of paper the size of an envelope upon each mail package which I made up for other lines, in order that the clerks who handled these packages might note on these slips the

errors of distribution and return them to me. By this means I was advised of my own errors and enabled to correct them and also to perfect my distribution scheme. This label slip was similar to the one now in use, and I had the pleasure, a few years after my first experiment with the slip, of seeing it officially adopted for the entire service."

It would not be altogether an easy task, perhaps, to find a country village which has not contributed at least one young man to the Railway Postal Service, and it certainly would be decidedly difficult to name one which has not furnished a candidate for such a position. The number of young men who compete is concisely shown by the following table:

	Took Civil Service Examination	Passed Examination	Made "Regular Substitutes"
1896	5,013	3,127	655
1897	6,431	4,710	381
1898	4,799	3,828	698
1899	5,220	4,319	774
1900	5,115	3,844	736
1901	5,090	3,593	933

This tells the whole story with the exception of adding that between ninety-eight and ninety-nine per cent. of the "regular subs" are appointed to full and regular clerkships. There are five grades of clerks, the lowest receiving \$900 a year, while the maximum salary is \$1,400. While the Second Assistant Postmaster-General is really the official head of the Railway Postal Service, the General Superintendent is the active executive officer of the system. In 1901 the



THROWING OUT THE MAIL SACKS AT A TRANSFER STATION

clerks distributed more than 14,181,224.420 pieces of mail.



TRANSFERRING THE MAIL FROM ONE TRAIN TO ANOTHER

That this vocation has its peculiar perils cannot be denied, and a constant effort is being made to diminish the liability to accident through the building of stronger and safer mail cars, the construction of which is now under government supervision. The archives of the service hold so many records of almost miraculous escapes from sudden death that the clerks are naturally inclined to feel that in some manner they will be delivered from destruction, although the position of the mail car in a train gives them the maximum of exposure to accident.

One clerk was busy throwing mail in a combination smoker and baggage car, when suddenly, without an instant's warning, he felt the car leap from the track and heard a terrific crash. When he regained consciousness the wreck presented this chaotic condition: the two forward cars had been plunged down a seventy-foot embankment; the combination car landed in an upright position with the rear trucks on the roof, every seat in the smoking compartment being utterly demolished, while on the floor of the mail compartment was a huge angular stone weighing not less than half a ton. How the mail clerk escaped unhurt will always be a mystery.

There is probably no department of the government service in which a higher standard of devotion to duty is maintained than in this. During a heavy freshet on the Susquehanna River, in 1890, all bridges were swept away and the railroad tracks along

the banks practically destroyed. Four mail clerks remained in their car until the water rising and flowing through the doors compelled them to take to an improvised raft, which consisted of pieces of floating sidewalks and other debris of the inundation, lashed together. On this frail craft they put their pouches, and carefully propelling by poles along with the current, gained the post-office, a mile away. They found this abandoned, with eight feet of water in the street at that point. They were almost exhausted and their condition was precarious. Finally, however, they were rescued by boats and taken into houses through the second-story windows. The letter mail was all intact and in fairly good condition.

Some time ago the "run" on a Western road was "short" a clerk because of sickness. An official of the service happened to be on the train and volunteered his services. For fifteen hours he stuck to his work at the letter case. In the journey of more than five hundred miles he had only a sandwich or two for food, and stood on his feet without relief. There are other instances on record where entire crews have stood to the work without food for twenty-four hours.

But the last and the best word which may be said of the Railway Postal Service of the United States is that it perpetuates the spirit of its founder, and maintains to a remarkable degree the devotion to duty, the pluck and the unflagging perseverance with which George B. Armstrong endowed it.



A NAP IN THE STORAGE CAR AFTER A STRENUOUS DAY

SALT AIR PAVILION: A FAMOUS BATHING RESORT
One of the few losing investments of the Mormons



THE MORMONS: A SUCCESSFUL COÖPERATIVE SOCIETY

BY PRACTICAL COÖPERATION THE VARIED BUSINESS ACTIVITIES OF THE MORMON PEOPLE CONTROLLED BY THE CHURCH—"JOSEPH F. SMITH, PRESIDENT," UNIVERSAL IN THE MORMON COUNTRY—THE ALMOST INFINITE SCOPE AND POWER OF THIS PRACTICAL RELIGIOUS PATERNALISM

BY

GLEN MILLER

FORMERLY UNITED STATES MARSHAL IN UTAH

Illustrated from photographs by The Johnson Company, Salt Lake City

WITH polygamy abandoned, the Mormon Church, I presume, is slowly going to pieces."

That was the gist of a hundred remarks I heard during a recent trip east. It represents a very prevalent impression held outside of Utah regarding the "Mormon question."

The Mormon Church isn't slowly going to pieces, or going to pieces in any way at all. On the contrary, it is, comparatively, growing faster in numbers and in power than any other church of the land. It is the widest awake, most vigorous and most aggressive

religious denomination in America today. The chief source of its strength can be defined in two words—practical coöperation. For the Mormon people have evolved what has so long eluded economists and philanthropists—a successful coöperative society.

Consulting the directories of a large number of the most important corporations in the State of Utah, you will find at the head of each the words "Joseph F. Smith, President." Joseph F. Smith has been President of the Mormon Church since October 17, 1901. His election to the presidency of every one of



WEIGHING SUGAR BEETS AT THE LEHI FACTORY

these corporations has occurred since that date. As a matter of form, a separate election takes place in each company for president; but an election to the presidency of the Mormon Church is equivalent

to an election to the presidency of these companies.

Joseph F. Smith, prophet, seer and revealer of the Mormon Church, presides over great mercantile institutions, factories engaged in producing the staples of life, railroads, power-plants, commercial and savings banks, implement warehouses, coal mines, pleasure resorts, educational institutions, book stores and daily newspapers and magazines. The potency of those words, "Joseph F. Smith, President," is known to every business man in Utah. The very least significance that can be attached to them is that the institutions over which Mr. Smith presides have the good-will and friendly interest of the church. The larger interpretation is that these institutions render allegiance to the Mormon Church and in return receive its protection and patronage. The concerns of which I speak are private corporations, organized under the general statutes of the State, engaging in business for profit. As a matter of fact, President Smith personally gives but little time to the affairs of these corporations of which he is the nominal head. His private ownership in any of these institutions may be taken to be very small. The institutions of which he is presi-



BOYS TESTING MOTHER BEETS TO BE PLANTED FOR SEED

The seed was formerly brought from Germany; now it is raised in Utah

Executive—Directors:

JOSEPH F. SMITH, Pres.
JOHN A. WINDER, 1st Vice Pres.
L. S. HILLS, Treasurer.
T. G. WEBBER, 2nd V. P.
JOHN J. BAUGHAN, W. S. WOODBRIDGE,
W. J. CURTIS, RUDGER CLAWSON,
GEORGE ROMNEY
CENTRAL COUNSEL,
LE GRAND WOODS.

UTAH LIGHT AND POWER CO.

ELECTRICAL
SALT LAKE, WATER, 1400 H. P.
Installation: 2" STEAM - 1900 H. P.
GAS: SALT LAKE, 430 M CU FT. DAILY.
GAS: GOSHEN, 50 M CU FT. DAILY.

Administrative:

ROBERT B. CAMPBELL,
Gen'l Manager and Secretary.
R. F. HAYWARD,
Electric Engineer.



SAVE YOUR MONEY

And when you get a dollar, deposit it with

Zion's Savings Bank & Trust Co.

Pres. F. Smith, President. Gen'l M. Campbell, Cashier.
A. H. B. Smith, Vice Pres. L. S. Hills, Secy. & Treas.

The

**State
Bank**

of Utah.

JOHN F. SMITH, Pres.

JOHN A. WINDER, 1st Vice Pres.

Indiana Crystal Salt Co.

SALT LAKE CITY, UTAH.

J. W. CLAYTON, Treasurer.



"IF YOU ARE PRIDE OF YOUR HORSE WITH AN EYE FOR
REASON THAT WILL NOT DETRACT FROM HIS VALUE."

Now if you are not proud of your horse, and your horse
is not more "saggy" or more shaggy than the above animal,
we simply cannot sell you a vehicle that will be in har-
mony with him.

But we hope you have a few pieces of "horse flesh," and
that you will give us an opportunity to match it with a fine
and stylish vehicle.

We are giving more for the money than any other ve-
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are anxious to enroll YOU as one of our well satisfied
patrons.

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& Machine Company**

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GEO. T. BUELL, Sec'y & Manager

STATE STREET
SALT LAKE CITY, UTAH

Z. C. M. I.

, Importers and Wholesale Dealers in General Mer-

SALT LAKE CITY, GOSHEN AND PROVO, UTAH, AND IDAHO FALLS, IDAHO.

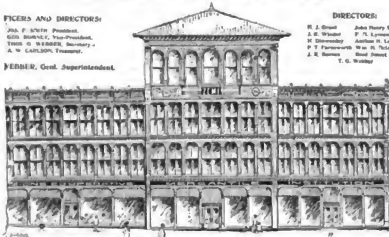
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A GROUP OF ADVERTISEMENTS SHOWING THE MANY ENTERPRISES OF WHICH
JOSEPH F. SMITH IS PRESIDENT



THE BEAR RIVER DAM OWNED BY THE UTAH SUGAR COMPANY



A MORMON RANCH HOUSE

dent are really under the direction of men skilled in the lines of trade represented, but all under the parental influence of the church.

Foremost of these great institutions or corporations is Zion's Coöperative Mercantile Institution. This great department store, doing a large wholesale and retail business that extends to every Mormon settlement, was established by Brigham Young in 1868. Over its main entrance on Main Street, Salt Lake City, is the all-seeing eye, emblem of Mormon authority, and encircling it are the words "Holiness to the Lord." Brigham Young was its first president, and each Mormon president in turn has been elected president of the Z. C. M. I. Every director since its establishment, with the exception of one, whose family belongs to the church, has been a Mormon, and the bulk of its capital, \$1,077,000, is in Mormon hands. One-tenth of the salaries of its employees is given to the church. The store has steadily paid large dividends, and its stock is quoted at sixty per cent. above par. Its wholesale business is mostly with the "Coöp." and other Mormon



COÖPERATIVE SHEEP RAISING
Each man's sheep are branded and the ranch expenses are divided *pro rata*

stores of the smaller towns and settlements. The annual sales are over \$4,000,000. In local parlance "The Coöp." always refers to Zion's Coöperative Mercantile Institution. Strolling through its many aisles, the words "brother" and "sister" will be heard oftener than any others, being the greetings of clerks to patrons. Naturally, the institution is

capital stock of \$2,000,000 sells in the open market at more than fifty per cent. premium. This company owes its existence directly to the Mormon Church. President Wilford Woodruff officially appointed the original committee for the Lehi sugar factory, with authority to solicit subscriptions from the Mormon people. This was the first and it is



THE COÖPERATIVE SUGAR FACTORY AT LEHI

22,000,000 pounds of sugar produced this year

glad to get Gentile patronage; but the bulk of its patronage is within the church. Large branch stores of the Z. C. M. I., as it is commonly called for brevity, are located at Ogden and Provo—next to Salt Lake City, the largest cities of Utah; and at Idaho Falls, Idaho.

President Joseph F. Smith also figures at the head of the Utah Sugar Company, whose

the largest of the factories owned by this company, which controls the sugar output of Utah. "Patronize home industries" was one of Brigham Young's favorite injunctions. Obedience to it was never more munificently rewarded than in the sugar industry. The company has returned to the stockholders almost their original investment in the way of stock dividends, besides paying an annual



PRESIDENT JOSEPH F. SMITH OF THE MORMON CHURCH
THE HEAD OF THE GREAT MORMON COÖPERATIVE ENTERPRISES

twelve per cent. cash dividend for a series of years. The wonderful profits of the undertaking attracted the cupidity of the Sugar Trust, to appease which the stockholders parted with a half-interest in their holdings. The presidency continues to rest in the hands of Joseph F. Smith. The sugar company has been a large dealer in irrigated lands. It owns at present over thirty thousand acres of land and the finest irrigation canal in the State of Utah, taking water from the Bear River by means of a dam constructed in the Bear River cañon. Every year this company

Another of the great industries to which the name of Joseph F. Smith is linked as presiding officer is the manufacture of salt. The Inland Crystal Salt Company has its salt fields and refinery on the shore of Great Salt Lake. Salt water is pumped from the lake to the flat alkali lands bordering the shore. The water is confined by dykes, and precipitates the salt as the water evaporates under the rays of the summer sun. The salt is scraped up and piled in pyramids and then carted to the refinery and made ready for the table. This company furnishes the larger



THE SALT BEDS OF THE INLAND CRYSTAL SALT COMPANY

contracts with farmers—ninety-five per cent. of whom are Mormons—for the beet output of their farms. The cultivation of the sugar beet has been the means of utilizing the labor of children in summer time; and as the Mormon family is proverbially large, it can easily be understood how peculiarly valuable this industry is to Utah. This year 22,000,000 pounds of sugar will be produced by the Lehi factory alone. The sugar beet has in recent years done as beneficent a work for the Mormon farmer as alfalfa did twenty years ago, the two products today forming the staple and profitable crops of the Utah "ranch."

portion of all the salt used in the Rocky Mountain and Coast country.

Closely associated with the salt company is another corporation which is also headed by the Mormon president. The Salt Lake and Los Angeles Railway is not so great a system as its name might indicate. It runs from Salt Lake City to Great Salt Lake, a distance of fifteen miles. Here are the salt works from which it gets the bulk of its freight traffic. Probably none of its commercial enterprises are more closely controlled by the church than this railway, whose name has figured unpleasantly in politics of the State in days not remote.

At the western terminus of the Salt Lake and Los Angeles Railway is Saltair Pavilion, probably the finest bathing resort in the world. This structure cost \$350,000 and is as nearly under the sole ownership of the church as any institution to which the name of "Joseph F. Smith, President," is attached. Brigham Young's old saying, "The people must be amused," has been perpetuated through theatres, concerts and out-of-door resorts to which the church has stood sponsor. By far the most pretentious of these amusement places is Saltair, the central pavilion



A MORMON SHEEP HERDER

of which is a duplicate in shape and dimensions of the famous Mormon Tabernacle. The resort has been one of the few investments on which the church has lost money.

Salt Lake is the distributing point for most of the wagons and agricultural implements used in the inter-mountain country. Over-shadowing every other institution of this sort is the "Consolidated Wagon and Machine Company," with a capital of \$1,160,700, of which Joseph F. Smith is the president. The vast quantity of implements handled by this company may be understood when it is stated that whole train loads of one kind of



SALT LAKE THEATRE

A box is always reserved for Joseph F. Smith

implement have been sent from the factory to this house. As the hardware business is within the domain of Zion's Coöperative Mercantile Institution, the implement company keeps out of this department. The Consolidated Wagon and Machine Company, like Zion's Coöperative Mercantile Institution, has branches in other cities in Utah and Idaho.

Commercial banking finds Joseph F. Smith at the head of the State Bank of Utah, and



THE TITHING STORE

Here the faithful deliver one-tenth of their produce to the church



"DEPOSIT HERE"

The statue of Brigham Young and the Mormon financial institutions

savings banking finds him at the head of Zion's Savings Bank and Trust Company, both located in the same building and the same room. Opposite the corner of this building, at the intersection of Main and "Brigham" Streets, stands the bronze figure of Brigham Young, with outstretched hand and finger pointing in the direction of these financial institutions. A wag, having in mind actual conditions, has represented the great prophet on his lofty pedestal pointing toward these banks as saying, "Deposit here." Be that as it may, Zion's Savings Bank and Trust Company has a larger deposit than all the other savings institutions (twenty-four) of Utah combined. The State Bank of Utah has until recently had the Governor of the State, a Mormon, as its cashier, as well as the president of the Mormon Church as its president. The advantage of church connection to financial institutions, not only in securing deposits, but in warding off danger in times of panic is not to be lightly estimated. Not a Gentile figures in the directory of either institution. Both banks have assisted in financing numerous church propositions.

The Consolidated Light and Power Company, whose main offices are located between Zion's Savings Bank and Trust Company and Zion's Coöperative Mercantile Institution, also has Joseph F. Smith for its president. It takes power from the Weber River, four miles north from Ogden, and transmits to Salt Lake City all the power and light used in the city, including that used by the street car system. It also furnishes light and power for Ogden.

The *Deseret Evening News* is the official organ of the Mormon Church. It now occupies, opposite the Mormon temple on one corner and the two Mormon banks just mentioned on the other, the handsomest and most costly business block in Utah. It is not necessary, perhaps, to mention that it has for its president Joseph F. Smith. It is managed by Horace G. Whitney, who is also secretary of the Utah Sugar Company. Indeed, it is interesting to observe how the same directors weave in and out through the companies over which the Mormon president presides. The *News*, all editions considered, has a larger circulation than any other intermountain newspaper.

Scarcely a town in Utah or a ward in any of the Mormon towns but has its coöperative

stores. The "First Ward Coöp.," "Second Ward Coöp.," and so on through the thirty-two wards of Salt Lake, are small outlying stores whose names point with certainty to the fact that they are owned by Mormons. These small "coöp." stores are the patrons of the big "coöp." stores. Still other names indicate the variety of directions that coöperation takes: "Coöp. Meat Market," "Coöp. Lumber Company," and many others. In the smaller towns these stores generally take the name of the place, as "Loa Coöperative Mercantile Institution," "Monticello Coöperative Company," "Spanish Fork Coöperative Association," "St. George Coöperative Store," "Nephi Coöp.," and so on down the list.

To appreciate fully how coöperation in Utah is practically born and bred into its "chosen people," it will be well to take a peep into the simplest phases of Mormon activity. The "teacher" is one of the lowest in the scale of Mormon officers. To the teacher in the city is assigned one-half of a block, and with the teacher's work begins the first object lesson in coöperation. It is the duty of the teacher to visit, meet, counsel with and assist every member of the church in his district. To the teacher each member confides his sorrows, joys, hopes and ambitions. To illustrate briefly with suppositious personages, we will take a block in Salt Lake City assigned to Orson Dunford. Dunford is a young man of good character, strongly imbued with the doctrines of the church, who has been selected by his bishop for this work because of his natural leadership. Among his first visits is his call upon Sister Anna Larsen, a domestic in a prominent Gentile family. Sister Larsen has heard from her mother, in Sweden, who wishes to join her daughter in America. The expense of the trip will be \$60, and of this the young servant can furnish \$25 from a year's frugal savings. The teacher reports the case to his bishop, and it is decided to send the money through the Copenhagen mission for the mother's expenses in coming to Utah. In due time the old lady arrives, secures some place in kitchen or factory, and eventually the loan is repaid the bishop from the combined savings of mother and daughter. Teacher Dunford learns on his rounds from Brother Nichols that the irrigation ditch running between the Nichols and Katzmeyer gardens is the

cause of acrimonious dispute. After hearing Brother Nichols' version of the trouble, the teacher calls on Brother Katzmeyer. The line of brotherly duty is then defined by the teacher and each neighbor admonished as to his obligations. If this is not sufficient to heal the wound, the matter is referred to the Teachers' Quorum, presided over by the bishop. The Quorum calls the disputants before it, listens to the case and renders its opinion. In turn, if this is insufficient, the matter is carried still higher. In certain grave and far-reaching differences the Quorum of the Twelve Apostles listen solemnly to the case and pass on its merits. Generally, however, the confidence placed in the teacher and the Teachers' Quorum makes their decision acceptable to both parties and stops the trouble in its incipency. Once a month the teachers of each ward assemble to compare notes and listen to reports from each other upon visits made in the various districts. Ordinarily a ward consists of nine blocks, so that there are eighteen teachers in a meeting. As each block is called by the bishop the teacher arises and makes a report—of which the following, taken verbatim, except as to names, is typical:

"Brother Brown and I visited Block Number Seven, spending two evenings in making the round. We found Sister Hagreen first-rate. She has had a bad cold, but is gradually improving. Brother and Sister Johnson we found in good health. Brother Sorenson's boy has a broken leg and he has been laid off work for two weeks. Brother Sorenson had a letter from his son Henry, who is on a mission in Australia, asking for \$10 to assist in building a meeting house. I think we should furnish the money. Sister Knowles is getting very feeble. She is nearly ninety years old, and needs a sack of potatoes and flour. A lady living in the middle of the block—recently moved in—has a baby, a little boy. He should be named. Everything on our block is in good shape and the Saints in fine spirit, though inclined to shirk meetings."

A very important part of the teacher's duties is to ascertain whether each member in his district obeys the law of tithing. The faithfulness and promptness with which tithing is paid determines largely one's standing in the church. Accordingly, the teacher expounds the law of the church which

calls upon every member to give one-tenth of his "increase" yearly for the benefit of the faith. The teacher, coming into close contact with the individual and the family, is in position to report to the bishop any shortcomings in tithing contribution or in obedience to "counsel." The teacher looks carefully into the conduct of the young members of his block, whom he urges to marry young and within their own faith. If illness, suffering or distress is discovered, it is immediately reported to the bishop, who sends the Relief Society (an organization of ladies in every Mormon ward) to attend to the case. There are no beggars among the Mormons—indeed, the spirit of mutual helpfulness is so general that few ever reach a condition where they ever want for the necessities of life. More than this, there is a regard for the aged and those incapacitated for work which is sadly lacking in Gentile communities. A holiday is set apart twice in each year for the aged, on which occasion the young turn out to assist in entertaining and comforting all those who have passed the sixtieth milestone of life. The teacher looks closely into all the affairs of his flock, being at once a confessor, counselor and family friend. He is the original source of information for the church, as well as the medium of communication to the brethren. The ease and rapidity with which "word" from the higher authorities can be passed to the whole Mormon people would surprise the uninitiated.

Another example of the coöperative system of the Mormons, and one of the best, is found in their colonization methods. The problem of providing homes and employment for the new converts, and of relieving the overcrowded condition of other settlements, has been constantly before the Mormon authorities. The leaders are always on the lookout for promising new fields for colonization. Lands capable of irrigation are always in demand. Canada, Mexico, Colorado, Wyoming, Arizona, Idaho and New Mexico have all been the scene of Mormon colonization at one time or another. Seldom does a Mormon "ranchman" emigrate alone to a new region. The recent settlement of the Big Horn Valley in northern Wyoming is typical of Mormon methods of colonization. The locality having been visited, examined and pronounced satisfactory by the Mormon leaders, word was passed through the Mormon settlements

of Utah that those seeking new homes should at once report to the authorities. One of the most practical farmers and able organizers was "called" by the presidency to lead the new colony. Selling his attractive home and quitting the neighborhood of a lifetime at call of his church, this brother responded promptly to the mission. At an appointed time and place the new colonists gathered with teams, wagons and supplies. With one of the Twelve Apostles as a guide, and their permanent leader—the man who had been called for the mission—they trekked three hundred miles northward to the Big Horn Valley. There they have since taken out a coöperative ditch (or canal, as it would be known in the East) which was constructed through the united efforts of the entire community. A coöperative store and a coöperative live-stock company followed in rapid succession. The settlers are laying the foundation for the same kind of flourishing community as was years ago established in the San Luis Valley, Colorado, the Snake River Valley, Idaho, and scores of other places. The Mormon farmer is conspicuous for his industry, frugality and integrity. He borrows sparingly and pays faithfully. The paying of debts is a tenet of the Mormon religion. He is by nature conservative and slow, seldom taking any important action without consulting bishop or teacher.

The habit of coöperation and of taking counsel enters into social, educational and political life quite as much as into business affairs. From the days of the Mormon pioneers the association of members into home stock companies for dramatic, operatic, concert and choir entertainment has been of much the same character as the coöperative business organizations.

Brigham Young was himself one of the most ardent patrons of amusements. In nearly every Mormon settlement there is some sort of dramatic company. Maude Adams, the well-known actress, had her first schooling in the old Salt Lake Stock Company, of which her mother, a Mormon, was a member. The present Governor of Utah was at one time leading man of the Home Dramatic Company of Salt Lake City. Thus the paternalism of the church has attended amusements of all kinds: Presumably the Salt Lake Theatre is the only theatre in the world where a private box is reserved every night of the

year for the head of the church and his family; and rarely does it go unoccupied. This box is reserved gratis (as provided in every contract made by the theatre with visiting attractions) for the president of the Mormon Church—a relation of church and stage that would seem strange indeed in any place but Utah. Another box is reserved in the same way for the president's two counselors.

In educational affairs the same general systems of coöperation and paternalism are to be noticed. Church schools known as "Brigham Young Academics" and "Latter Day Saints' Colleges" have been established by the Mormons in various cities. These are supported from church funds supplemented by tuition from students. A number of handsome buildings are now being erected on the tithing-house square, opposite the temple in Salt Lake City, which promise to be the centre of Mormon educational work. Indeed, the educational movement has received a remarkable impetus in the last few years. Unfriendly commentators have maintained this to be an indication that the church wishes to educate its youth so that it can supply every field from its own ranks to the exclusion of the Gentile or non-Mormon element. This is placing a strained and unjust interpretation upon a very praiseworthy movement. It is true that the spirit of coöperation leads the Mormons to patronize their own representatives in the professions in preference to outsiders. So jealous is the church of the undivided interest of its members that they are forbidden to join secret societies, labor unions or fraternal insurance companies. At the late October General Conference, Apostle Abram O. Woodruff advised the formation of a labor organization within the church, that the work of the Mormons might be reserved for Mormon laborers.

In religious work the coöperative system of the Mormons is so well known as to need little more than passing reference. At the call of the presidency every member of the church is ready to go forth "without purse or scrip" to preach the Mormon doctrines. There are no salaried preachers in the Mormon Church. As a rule, the missionaries travel in pairs. The latest country to be invaded is Japan, where one of the Mormon Twelve Apostles, Heber J. Grant, with a corps of

missionary assistants, is vigorously prosecuting the religious work of the church.

In politics the coöperative spirit is the source of continual bitterness. Both national parties continually nominate prominent church officials for no other reason than the expectation of winning votes through the influence of this coöperative spirit. People accustomed to work together in every other relation of life are not likely to abandon the habit when it comes to the domain of politics, and especially when they are encouraged in it by those who do not belong to their faith. A few years ago one of the most prominent Mormon apostles was disciplined and dropped from his high place in the Mormon Church because he entered into a contest for the United States Senatorship without the permission of his church. In an authorized interview at that time with the writer of this article, the three presidents of the church stated that it was not thought compatible with the requirements of religious duties that members of the Quorum of the Twelve Apostles should enter into a scramble for

political office—at least, not without asking and securing the permission of the church to which they had dedicated their services. Inasmuch as one of the Twelve Apostles is at present waging an open and aggressive contest for Senatorial honors, it may be reasoned that "permission" has been granted, and the apostle will be elected United States Senator.

Almost every other attempt in the United States to establish coöperative industries, even where backed by large wealth, has practically been a failure. Paternalism always implies a partial surrender of individual liberty. As developed by the Mormon people, however, the coöperative system has utilized the services of many who would have succumbed to intense competitive effort; has eliminated waste, and has at all times presented a solid front to the enemies of the church; and Joseph F. Smith, the present head of the Mormon Church, is conspicuous for the progressive, clear-headed and fair-minded way in which he is administering the duties placed upon him.

THE NEEDS OF AMERICAN PUBLIC EDUCATION

GREATER EXPENDITURE NECESSARY—HOW PUBLIC SCHOOL CONDITIONS SHOULD BE IMPROVED BY BETTER BUILDINGS, BETTER TEACHERS, GREATER CARE FOR HEALTH, NEW METHODS AND STUDIES AND IN MANY OTHER WAYS

BY

CHARLES W. ELIOT

PRESIDENT OF HARVARD UNIVERSITY

An address delivered before the Rhode Island Institute of Instruction October 23, 1902

ON October 17th I advocated before Connecticut teachers the expenditure of more money for education in the United States on the ground that the shortcomings and failures in American education, and the disappointments concerning its results, have been many and grievous; and on the next day I advocated before New Hampshire teachers increase of educational expenditure on the ground that many successes have been won by American schools and colleges, and that these successes, though involving increased expenditure,

have been approved and rejoiced in by the American public. The first argument was an incitement to greater exertions, because of ill success or of imperfect attainment of ends wisely sought; the second was an encouragement to greater expenditure because of the results achieved with the expenditure already made. Tonight I wish to describe some of the objects for which increased expenditure should be made in the schools supported by taxation, and to adduce some further considerations fitted to encourage American communities to larger expenditure.

The expenditure on school buildings has been generous during the last twenty years; but in two respects most of the buildings erected during this period have fallen far short of the proper standard. First, in cities and large towns all school buildings should be fire-proof, and particularly all halls and stairways should be fire-proof. Wooden staircases should be absolutely prohibited in schools intended for children under fifteen years of age. Secondly, the woodwork in the interior of school buildings should be reduced to the lowest terms, and should be carefully constructed with reference to the facility of keeping it clean, just as the woodwork in the interior of a modern hospital is constructed; and the materials of walls in school buildings should not be absorbent, but, on the contrary, should resist both moisture and gases, and should be capable of thorough cleansing. The last remark applies also to the heating apparatus for school buildings. All flues, ducts, and boxes for the reception and conveyance of cold or hot air should be so built and disposed that their interiors can be cleaned. Any one who has examined with a lens the extraordinary amount of animal and vegetable matter which accumulates on a sheet of "tangle-foot" fly paper placed in a cold-air box, at any season of the year when the ground is not covered with snow, will heartily concur in this prescription. The observance of these rules would, of course, demand additional initial expenditure on school buildings, but would diminish the cost of maintenance. Again, whether in town or country, a large open space, yard or garden should surround every school building, and should be kept with neatness and decorated with shrubs and flowers. The denser the population in which the school is situated the greater the need of this open space; and the larger the school the larger should be the space surrounding the building. Here again is a call for a large additional expenditure; but it is an expenditure which the welfare of city children urgently demands. Every school should have the means of turning at least half its pupils into the open air simultaneously, and the space about the school should be so arranged that hundreds of children can occupy it without marring its decorative vegetation. This means, of course, that the greater part of every schoolyard should have a surface

of gravel or asphalt. Such grounds could be made useful in crowded quarters to many people besides the school children. If it be urged that it is impossible in American cities to depend on the permanent occupation of any particular district by a population which needs schools, and therefore that the construction of durable schoolhouses and the provision of grounds about them are inexpedient, I reply that if a schoolhouse and its yard, once situated in the midst of a dense population, become unnecessary, it must be because the district has been abandoned as a residence quarter in favor of factories, shops, or some other sort of productive business; and, therefore, if the city has provided in such a district a large schoolyard, it will be able to compensate itself for the loss on its building by the rise in the value of its land.

Next to this improvement in schoolhouses and schoolyards comes improvement in the sanitary control and management of schools. This control requires the services of skilful physicians; and such a physician should be officially connected with every large school. It should be his duty to watch for contagious diseases, to prevent the too-early return to school of children who have suffered from such diseases, to take thought for the eyes of the children, lest they be injured in reading or writing by bad postures or bad light, to advise concerning the rectification of remediable bodily defects in any of the children under his supervision, to give advice at the homes about the diet and sleep of the children whose nutrition is visibly defective, and, in short, to be the protector, counselor and friend of the children and their parents with regard to health, normal growth, and the preservation of all the senses in good condition. Such medical supervision of school children would be costly, but it would be the most rewarding school expenditure that a community could make, even from the industrial or commercial point of view, since nothing impairs the well-being and productiveness of a community so much as sickness and premature disability or death. As in an individual, so in a nation, health and strength are the foundations of productiveness and prosperity.

The next object for additional expenditure is better teachers. Of course, teachers should know well the subjects which they are to teach; but that is by no means sufficient.

Every teacher should also know the best methods of teaching his subjects. College professors heretofore have been apt to think that knowledge of the subject to be taught was the sufficient qualification of a teacher; but all colleges, as well as all schools, have suffered immeasurable losses as a result of this delusion. Of course, it is better for a teacher to know his subject without knowing the right method of teaching it than to acquire a formal method without knowing the subject; because a conscientious teacher, by experimenting on his pupils, may in years acquire a good method at their expense; but teachers who are acquainted at the start with both subject and method are what schools and colleges urgently need. To secure this double proficiency means a greater expenditure on the training of teachers. Under the head of better teachers may best be mentioned certain specific desiderata such as a larger proportion of male teachers in urban school systems, a larger proportion of women teachers who have been educated at college, and a larger proportion of both men and women who have received a genuine normal school training. All these are expensive desiderata.

With better teachers, numerous other improvements would come in, as, for instance, a better teaching of literature and of history, and better biological and geographical instruction, these natural-history studies being pursued by the pupils in the open air as well as in the schoolrooms. I have elsewhere urged that all public open spaces, whether country parks, forests, beaches, city squares, gardens or parkways, should be utilized for the instruction of the children of the public schools by teachers capable of interesting them in the phenomena of plant and animal life. But this means quite a new breed of common school teachers. The teaching of geography in the open air is a delightful form of instruction; but it requires a teacher fully possessed of the principles of physiography, and knowing how to illustrate these principles on a small scale in gutters, brooks, gullies, ravines, hillsides and hilltops. Some nature study of this desirable sort has been already introduced into American schools; but it is not persisted in through years enough of the school course. There is needed much more of this sort of study, beginning in the kindergarten and going through the high school.

Vacation schools can give this sort of instruction to great advantage. It must be confessed that it is an expensive kind of instruction; but this is one of the places at which more money should be spent.

Given better teachers, the next additional expenditure should be due to a large reduction in the number of pupils placed before a single teacher. This number may now be said to vary from forty to sixty in the different school systems of the United States. The higher number is monstrous and the lower far too large. Twenty to twenty-five pupils to a teacher are quite enough, if there is to be secured an adequate degree of attention to the individual pupil and a proper classification of each group of pupils according to their quality and capacity. This is an improvement very urgently needed in the American schools of today. It would doubtless cost a good deal of money, but it would not necessarily double the item of salaries; for one competent teacher, with an intelligent though less experienced assistant, can take good care of forty pupils. When from forty to sixty pupils are allotted to a single teacher with no assistant, there is no opportunity for individual instruction; the whole group must move on together; and it is inevitable that the brighter pupils should be sacrificed to the duller, which is the most wasteful thing a school can do. The improvement of which I am now speaking would lift American education to quite another plane of efficiency, and would make the life of the teacher vastly more interesting, more rewarding and happier. The personal contact between teacher and pupil would be more frequent and intimate, and the teacher's function would change from driving a flock to leading on and stimulating individuals.

In order to keep good a large staff of teachers employed by a city or town, a system of retiring allowances for teachers is indispensable. It is the American practice to keep in office superannuated or partially disabled teachers who have served long and well, and to pay them their salaries until death or complete disability overtakes them. This practice is uneconomical and very injurious to the children who come under the charge of such partially disabled or senile teachers. It is considerate toward the few veterans, but very inconsiderate toward the hundreds of children whose education is

impaired. A proper pension system gives the managers of a school system the means of retiring such teachers, and of replacing them by fresh, well-selected appointees, without causing any hardships or wounding any feelings. A good pension system is not expensive; for when an old teacher retires on an allowance the retirement will ordinarily give rise to several shiftings of place, and the vacancy really filled is one near the foot of the scale of salaries. There is a pension to pay, but there comes upon the pay-roll a newcomer's salary which is much smaller than the salary of the teacher of long service. Pensions, or retiring allowances, would not therefore be the cause of a large new expenditure, but would instead bring about a great increase in the competency or efficiency of any urban school system.

The universal employment of highly trained superintendents in both urban and rural systems is the next improvement of which I would speak. This improvement has been partially introduced; but it ought to become universal, and the quality of the superintendence should be always rising, until the position of superintendent shall be recognized as the highest in a school system, whether in city or country. A single superintendent can, of course, serve several rural districts or towns; and to obtain the right kind of superintendent such coöperation is necessary. In general, the aid of the State is also necessary to provide rural communities with competent superintendents. Such superintendents should be entirely independent of political influences, and should enjoy a large measure of authority and freedom in their functions. They ought, as a rule, to be men or women of college education, who have had some experience themselves as teachers in schools or academies. The kind of superintendent that I have in mind is one who comes into immediate contact with both teachers and pupils. The wide-field superintendence, such as a State superintendent may exercise, is of course desirable; but such a remote official may not have the immediate good influence on the teaching, discipline and business management of the schools which a rural superintendent and the inspector or supervisor in large city systems may exercise. It is the man or woman who is constantly going about among the schools in his or her charge whose educational quality needs to

be raised. The head of a State system, or of a large city system, is an administrator. The rural superintendent or city supervisor is primarily an inspector, teacher and guide.

All business or executive functions ought to be withdrawn from the school committees or boards and handed over in part to the superintendent, and in part to a business agent, who, like the superintendent, is a permanent salaried officer. Since the present sub-committees of school committees or boards serve without pay, the salaries of these business agents would, of course, be an additional charge; but a competent and experienced agent, by conducting school business judiciously, will always save more than his salary and will, moreover, greatly increase the wholesomeness and efficiency of the schools.

An expensive improvement in the public schools, but one urgently needed, is the enrichment of the school programme for the years between nine and fourteen, and the introduction of selection among studies as early as ten years of age. Unless this is done, and done soon, the public schools will cease to be resorted to by the children of well-to-do Americans. The private and endowed schools offer a choice of foreign languages, for instance, as early as ten years of age and even earlier; and everybody knows that this is the age at which to begin the study of foreign languages, whether ancient or modern. In large cities it seems to be already settled that the private and endowed schools get the children of all parents who can afford to pay their charges. One reason for this result is that the programmes of the public schools are distinctly inferior to the programmes of the good private and endowed schools; and they are inferior at precisely this point—they have too limited a range of studies in the years between nine and fourteen. It is, of course, not desirable that each individual child should pursue a great variety of studies; but it is essential that each individual child should have access to a variety of studies. The tendency in all American school systems has been to segregate the foreign languages, the mathematics beyond arithmetic, and the higher scientific and historical studies in the high school programmes—which means that only that small proportion of children who go on to the high school have any access to those studies. No arrangement could pos-

sibly be more undemocratic; although its inventors did not foresee the real working of their method in this respect. The achievement of this enrichment of the programmes would cause the retention of children in school for a larger number of years, and the carrying forward of more children into the upper schools; and these are effects greatly to be desired. I am bound to acknowledge, however, that these changes would be decidedly costly; they would require more accomplished and more skilful teachers for the years between nine and fifteen, and more apparatus for teaching; and if they were successful there would be more children to teach in the upper grades of the system.

An incidental effect of these changes would be the development of departmental instruction—that is, skilful teachers would teach one subject through several grades, instead of teaching all subjects for one grade. It was in 1766 that Harvard College—then no more than a good high school—abandoned the method of teaching all subjects to one class by one man. The American public school system bids fair to be nearly one hundred and fifty years behind Harvard College in adopting the departmental method—a method which develops in both teachers and pupils a growing interest in their work and increases greatly the personal influence of teachers, because the staying pupils work through several successive years under the same teacher. Another effect of this enrichment of the programmes would be the postponement for every individual pupil of the grave decision between studies which permit access to the higher institutions of learning, and studies which do not. The later this decision can be made the better for the individual, and the better for the schools; because a course of study which is preparatory to all possible future routes in education is sure to be a better course than the poorer of two courses, one of which leads on to the higher institutions and the other does not.

The election of studies in secondary schools involves increased expenditure for two reasons: first, because there are more subjects to be taught; and, secondly, because each subject will be carried further than it is under a uniform prescribed course. Moreover, the classes in each subject will be smaller than they are under a prescribed system, because the total number of pupils will be divided

among a larger number of subjects. The election of studies in secondary schools is already introduced in many places, generally under the form of several groups of studies bearing different names; but sometimes, as in Boston, in a frankly elective method. The experience of the American colleges in regard to the elective system demonstrates that it is much more costly than the prescribed; but it is also so much more effective for all educational purposes, whether mental or moral, that it advances steadily in all the faculties of arts and sciences, and never takes a backward step. It may be safely assumed, therefore, that it will make steady progress in the secondary schools of the country, and with like results—greater cost, but greater profit.

In many scattered places in the United States perfect demonstration has already been given that manual training and instruction in the mechanical arts and trades are, in the first place, valuable as means of mental and moral training, and, in the second place, useful for the individual toward obtaining a livelihood, and for the nation toward developing its industries. Accordingly, manual training schools, mechanic arts high schools and trade schools ought to become habitual parts of the American school system; and normal schools and colleges ought to provide optional instruction in these subjects, since all public school teachers ought to understand them. Such schools are more expensive than schools which do not require mechanical apparatus and the service of good mechanics as instructors; but there can be no doubt that they will repay promptly their cost to the community which maintains them.

Vacation schools have also demonstrated their great usefulness in cities and large towns. The best ones offer manual training for both boys and girls, as well as book work, and are heartily welcomed by both parents and children. They combat effectively the mistaken policy of long vacations for children who cannot escape from the crowded city streets and tenements. Indeed, the experience recently gained in city vacation schools and in the summer courses of colleges and universities proves that the long summer vacation of nine to thirteen weeks is by no means necessary to the health of either school children or maturer students. The best method is to keep the pupil in vigor all the year by means of frequent recesses during

school hours, free half-days twice a week, and occasional respites of a week. Then the vacation school in summer should offer a distinct variety of work in subjects different from those pursued the rest of the year; for children and adults alike find great refreshment in mere change of work. For example, the competent college professor may indeed seek change of air and scene during the summer vacation, but it is for the purpose of doing under advantageous conditions a kind of intellectual work different from that which engrosses him in term-time, and not with the intention of keeping his mind vacant or inert. Furthermore, vacation schools in the poor quarters of closely built cities are downright refuges from the physical squalor and moral dangers of the streets. It is obvious that vacation schools on an adequate scale must cause a serious addition to school expenditure of a city or large town; for they require the services of an additional corps of teachers, and they need additional apparatus, materials and service. It is equally obvious that these schools are urgently needed by a large proportion of the population on grounds which are simultaneously physical, mental and moral. I say nothing here about the kindergarten, because, as I have twice pointed out of late, the kindergarten has already been somewhat extensively adopted as part of the public school system, and is winning more and more favor.

Another additional expenditure which public schools ought to incur as soon as possible is a development of instruction in drawing. Drawing is a mode of expression which ought to be as universal as writing. There is no art, trade or profession in which it is not useful, and the enjoyment of life may be greatly increased by the habitual use of the pencil in sketching interesting objects of all sorts, natural or artificial. Time for drawing can be obtained in school programmes by diminishing the time given to penmanship. Instruction in one art will help the other, and of the two drawing is far the most instructive, since it trains the powers of observation and helps to make the retained impressions both accurate and vivid. It is an incidental advantage of drawing that it reinforces the teaching of geometry, and particularly of solid geometry. The comparative neglect of geometry is one of the most curious phenomena in American education, when the

importance of that subject in the mechanical and constructive arts in which Americans excel is duly considered.

Music is another subject which ought to be made much more of in all American schools, public, private and endowed, than it now is. The elementary schools do more for music than the secondary schools; so that the course of musical instruction is broken off too early and the skill gained before fourteen years of age is lost later through disuse. A moderate degree of musical knowledge and skill adds greatly to the enjoyment of life, no matter how the livelihood may be earned. To increase rational joy is one of the objects which public education should always keep in sight. I need not say that music has always been a true culture subject, an ally of literature, art and religion.

Lastly, the schools ought to be provided liberally with all appliances which can improve either teaching or administration, and with all service which can relieve the teachers of unnecessary bodily or mental strains. Such appliances are books, maps, charts, models, diagrams, lantern-slides and electric lanterns, telephones, collections of specimens, physical and chemical apparatus, casts, photographs, pictures, typewriters and pianos. To try to teach without these aids is like trying to stop a conflagration with buckets passed from hand to hand, or like starting for Chicago in a one-horse chaise instead of in the Empire State Express. The prevailing poverty of our schools in these respects is lamentable. At every stage of education, from the kindergarten through the university, an alert and progressive teacher can save his or her own time and energy by transferring the mechanical or routine parts of his or her work to an assistant who receives a much smaller compensation than the teacher. To save that valuable time and energy for the best work is the truest economy, yet this economy is seldom practiced. In both these respects American schools fall far below the standards of well-conducted commercial and industrial establishments.

I have thus enumerated various ways in which a greatly increased expenditure on American schools ought to be made. This audience of teachers may perhaps have observed that I have not said a word about raising salaries. That is because I do not consider that direction the best one for

additional school expenditure. The teacher needs many other things more than higher pay—good light and air to work in, medical inspection and care for the school, all available assistance in the schoolroom, all useful apparatus for teaching—particularly that which appeals to the eyes and fingers of the pupils—relief from mechanical and clerical work, a better tenure, a pension at disability, and expert instead of amateur supervision. And, on the other hand, the community needs to have the teacher a more intelligent, better-informed, robust and gayer person, that children will "take to" and wish to please, and that parents will be glad to have visit them in their homes.

With these objects in view the expenditure in those parts of our country where it is now smallest ought to be raised as rapidly as possible to the level of those regions where it is now greatest; and in those regions where the expenditure is now most liberal it ought to be doubled as soon as possible.

I know that some people will say that it is impossible to increase public expenditure in the total, and therefore impossible to increase it for schools. I deny both allegations. Public expenditure has been greatly increased within the last thirty years, and so has school expenditure. What the country has done it can do again; and, furthermore, it can better its past record. Moreover, school expenditure ought to be increased, even though the total expenditures of the community should not rise; because it yields a greater return than any other expenditure. It is, indeed, far the most profitable of all the forms of public expenditure; and this is true whether one looks first to material prosperity, or to mental and moral well-being; whether one regards chiefly average results, or the results obtained through highly gifted individuals.

But some skeptic may ask, How do we know that even the expenditure the country now makes for education is worth making? And again, how do we know what the results of popular education are? What test is there for the efficiency of popular education? Let me try, in conclusion, to answer these grave questions.

In the first place, as I look back on the progress of American education since the Civil War, I think I see that education is the one agency for promoting intelligence and

righteousness which has ever unquestionably gained power in the United States during the last half-century, the one agency which has not only retained its hold on the democratic masses, but has distinctly gained more and more public confidence, and received from the democracy greater and greater moral and material support. The democracy has believed more and more in the efficiency of schools and colleges; and schools and colleges have more and more taught and acted out democracy. This is only saying, on the one hand, that the popular masses perceive that it is in large part the schools and colleges which implant in successive generations democratic ideals and make them fit to be free; and, on the other, that the schools and colleges believe in the democratic ideals, and fervently desire to promote brotherhood, unity and the practical acceptance of the Pauline doctrine, "every one members one of another." Can we say of any other of the organized inspiring and moralizing forces in American society that it has gained strength and increased its influence during the past fifty years? The efficiency of legislatures and the respect in which they are held have unquestionably declined since the Civil War. American legislative assemblies, whether municipal, State or national, have repeatedly shown themselves unable to solve, or even begin to solve, the new problems which have arisen in rapid succession out of the incredible changes in industry, commerce and transportation. In other words, legislatures have not been able to keep up with American progress in other fields. Some of them have ceased in large measure to be deliberative assemblies, and habitually transact important parts of their business in secret committee meetings. Others have proved to be in the hands of one man, himself not a public official; so that legislation is adopted or rejected at that one man's will—sometimes a purchasable will. Congress has repeatedly disappointed the people in respect both to its intelligence and to its magnanimity; and with a rather piteous recognition of its own incapacity it has repeatedly taken refuge in the discretion of the Executive.

Most persons will also agree that the courts of our country are as a whole less efficient and less respected today than they were a generation or two generations ago. Their decline is painfully apparent in criminal

matters—and is plainly visible in civil matters also. The efficacy of the death penalty has been well-nigh destroyed by the delays ordered or permitted by courts. The courts often seem embarrassed by conflicting precedents or contradictory decisions, and paralyzed by multiplying technicalities and ingenuities of counsel. Moreover, they not infrequently give uncertain sounds. Hence reverence for law is not maintained at its old level; and lawless violence against suspected criminals claims justification in the delays and uncertainties of legal processes.

The church and its ministers cannot be said to have risen in public estimation since the Civil War. Its control over education has distinctly diminished. In some of its branches it seems to cling to archaic metaphysics and morbid poetic imaginings; in others it apparently inclines to take refuge in decorums, poms, costumes and observances. On the whole, it has not been able to keep up with the progress of either science or democracy—those *Atalantas* of the nineteenth century that never stop for golden apples dropped in their path—and it has shown little readiness to rely on the intense reality of the universal sentiments to which Jesus appealed, or to go back to the simple preaching of the gospel of brotherhood and unity—of love to God and love to man. So the church as a whole has today no influence whatever on many millions of our fellow countrymen—called Jews or Christians, Protestants or Catholics though they be. We still believe that the voluntary church is the best of churches; because a religion which is accepted under compulsion is really no religion at all for the individual soul, though it may be a social embellishment or a prop for the State. Yet, believing thus, we have to admit that the voluntary church in the United States has no hold on a large and increasing part of the population.

By no positive fault of their own, but by a sort of negative incapacity, legislature, court and church seem to be passing through some transition which temporarily impairs their power; but the schools and colleges in the United States, while changing and developing rapidly, have suffered no impairment of vigor or influence. On the contrary, education as an uplifting agency was never so effective with the democracy as it is today. To redeem and vivify legislatures, courts and churches, what agency is so promising as

education? Next to steady productive labor education is the prime factor in social and industrial progress. This primacy of education among the various civilizing factors affords the strongest possible inducement to spend every dollar on popular education which can be spent advantageously. It also gives an answer, drawn from experience, to the question—Is the present expenditure worth making? A reasonable foresight supplies another answer. We should ask ourselves what better remedy than wise popular education, what other thorough remedy, can be imagined for the new evils which threaten society because of the new facilities for making huge combinations of producers, or middlemen, of farmers, or miners, or manufacturers, of rich or poor, of laborers or capitalists. Masses of men are much more excitable than average individuals, and will do in gregarious passion things which the individuals who compose the masses would not do. A crowd is dangerously liable to sudden rage or—what is worse—sudden terror, and either emotion may overpower the sense of responsibility and annihilate for the moment both prudence and mercy. There never was a time when common sentiments and desires could be so quickly massed, never a time when the force of multitudes could be so effectively concentrated at a selected point for a common purpose. Against this formidable danger there is only one trustworthy defense. The masses of the people must be taught to use their reason, to seek the truth, and to love justice and mercy. There is no safety for democratic society in truth held, or justice loved, by the few; the millions must mean to do justly, love mercy, and walk humbly with their God. The millions must be taught to discuss, not fight; to trust publicity, not secrecy; and to take timely public precautions against every kind of selfish oppression. To give this instruction steadily and universally society possesses no organized agency which compares in present efficiency and future promise with the schools. Therefore, the present expenditure on schools is fully justified and increased expenditure urgently demanded. I can almost hear the objection—this expectation of popular schools is extravagant—they are only for teaching reading, writing and ciphering. Not so, I reply. The common schools should impart the elements of physical, mental and moral training, and in

morals the elements are by far the most valuable part.

Secondly, let me deal briefly with our skeptic's demand for a test of the results of popular education. I think there must be some sure-working practical tests of the efficiency of popular education. Can they be stated? Concerning an educated individual, we may fairly ask, can he see straight? can he recognize the fact? Next, can he draw a just inference from established facts? Thirdly, has he self-control? or do his passions run away with him? or untoward events daunt him? These are fair tests of his mental and moral capacity. One other test we may fairly apply to an educated individual—does he continue to grow in power and in wisdom throughout his life? His body ceases to grow at twenty-five or thirty years of age—does his soul continue to grow? It is obvious that these tests are difficult of application to a nation; but we are not wholly without means of applying them to our own people as a mass. The people live by agriculture, mining and manufacturing; and these great concerns cannot be successfully managed unless multitudes of men recognize essential facts, and draw the right inferences from the truths they embody.

The success with which the American people get their livelihood shows that there is much soundness in their mental training. Millions of them must be able to observe accurately and to infer justly. One of the most difficult tasks for a man who thinks imperfectly is to get over a delusion. Whenever the American people through the reasoning power of millions get over a delusion, they shed light on the efficiency of their own education. We have had a recent piece of evidence of this sort in the recovery of our people from the widespread silver delusion. Do their passions run away with the people? They did not after the Civil War, the forbearance of the Confederates being as remarkable as that of the Unionists. They did not at the close of the fighting with the poor Spaniards in Cuba. Never were terms of surrender more generous, or, I may add, more ingenious. The same self-control was manifested in the intelligent withdrawal of our soldiers from China. Do untoward events daunt the people? No. As a rule, our population bears calamities and losses with constancy and calmness. The country lately lost its

singularly beloved Chief Magistrate, and lost him in an intensely mortifying way; but our Government never staggered even for a moment, and the whole work and life of the people went on without a halt, or even a quiver, excepting the momentary thrill of horror and humiliation. In the recent coal strike, which doubled the price of a necessary of life and caused widespread injuries and anxieties, the attitude of the much-enduring public was calm and discreet. The public took sides with neither party, looked on quietly at the irrational strife, accepted no bad advice, tried no unconstitutional remedies—just bore the losses, and waited five months for the combatants to accept that method of inquiry, discussion and mutual consideration which ought to have been adopted when the conflict first arose. The strike has furnished a good illustration of popular self-control under very irritating conditions. Such are some of the indications that American education has not wholly failed of its high object.

Can we apply to the education of the nation the ultimate test which we finally apply to the education of an individual? As the national life grows broad and rich does the national soul or spirit grow with it? Does mental and spiritual progress keep pace with material? God only knows; but mortals may discern some facts which make toward the conclusion we should all like to establish. Thus, in regard to the mental powers of the population, whenever new machines, be they reapers, looms, cranes, crucibles, guns or electric motors, have required more intelligent men behind them, the nation has invariably supplied on demand the needed men. This evidence is furnished incessantly on an immense scale, and it signifies that the people rise to their higher work. When a quiet villager, who has been just caring for his farm and his sawmill, is made school agent or chairman of the Board of Health, and is forced to think of all the children in the town, or of all the sick in it, if he does his work well, grasps ideas novel to him, and by energetic and judicious action spreads them through the town, we say that he has grown to his enlarging work. On a higher plane—that is just what we do say of Benjamin Franklin and Abraham Lincoln. In like manner the American people has grown to its expanding and novel industries, arts and commerce,

and has clearly done its daily work better than the competing nations. Hence, the total training of its youth, an important part of which has been given by the schools and colleges, must have been measurably successful.

The extraordinary sale of dictionaries and encyclopedias in the United States demonstrates the existence in innumerable households of the habit of looking up the meaning of words and the facts about unfamiliar topics encountered in conversation or in reading. This habit implies a lifelong desire to learn. The reading habits of the people prolong mental activity and growth, widen interests and quicken sympathies; for the great mass of the people's reading matter is pure and instructive, in spite of the mortifying fact that parts of most daily newspapers are given over to Cloacina and the Furies.

But all this refers to the national mind applied to things material, or to the ordinary plane of commonplace life. How about things spiritual, the great moral movements, and the refinements and adornments of life? Is there any better test of unselfish and gentle feeling in a multitudinous people than their habitual treatment of women and children? Now, on the whole, Americans of all classes treat their women in large things and small better than any other people treat theirs. American men are laughed at by foreigners for making their wives and daughters extravagant and self-indulgent. On farms the women do not work in the fields as all foreign peasant women do. For factories we have in many States protective legislation in regard to the employment of women and children. There is a very significant difference between the expectation on the part of the American people of personal purity and domestic honor in their public men, and the expectation in those regards on the part of any European people concerning their kings, princes and high officials. The politician who disappoints the American people in that respect is lost, be he ever so serviceable a person. As to the treatment of children, it is certain that the discipline in American families and schools is gentler and more considerate than in other countries. Moreover, there has been a great advance in this respect within thirty years, an advance which has made the whole people happier and better.

This is a widespread gain, made in millions of homes and schools; and it not only tells on the present moral condition of our people, but is of the highest promise for the future. Somehow slavery is gone and intemperance has been checked and made disgraceful. The results testify to the moral forces which produce them.

If one would estimate the progress of a people in the fine arts and in science, one must go to the works of the few men who best illustrate the national art and science. In the whole history of sculpture can any one point to a more informing, inspiring and touching military monument than the Shaw monument on Boston Common? There are bigger and costlier; but none more expressive, juster or more uplifting. Look through the whole list of astronomical observatories since such establishments existed and you will not find one which, in proportion to its resources, has produced so much routine work and made so many new discoveries as the Harvard College observatory under its present director. In the prompt and general application of scientific discovery to the service of humanity Americans certainly excel other nations. It is enough to mention anæsthesia, the telegraph, the telephone, and the innumerable inventions of labor-saving machinery. The use made of riches is another test of the moral condition and standards of a people. Now the stream of gifts from private persons to schools, colleges, universities, libraries, art galleries, museums and laboratories in the United States flows in a volume which has never been approached in the history of the world. It is said that there are only six towns in all Massachusetts the inhabitants of which have no access to free books. It is not only the few very rich men who provide educational endowments. Every year thousands of Americans take part in this most intelligent beneficence, wiser than any endowment of hospitals, asylums or infirmaries, because a work of construction instead of palliation. Truly there are some encouraging evidences that the soul of the people keeps growing.

So, in good heart and hope, learning from failures what not to do, and from successes what next to attempt, we may all press on together toward our national goal—the perfecting of an intelligent individual citizenship in a Christian democracy

A NEGLECTED EPIC

HOW THE REAL HERO OF THE AMERICAN WESTWARD
MOVEMENT HAS BEEN FORGOTTEN IN LITERATURE

BY

FRANK NORRIS

AS I have tried to point out once before in these pages, the Frontier has disappeared. The westward-moving course of empire has at last crossed the Pacific Ocean. Civilization has circled the globe and has come back to its starting point, the vague and mysterious East.

The thing has not been accomplished peacefully. From the very first it has been an affair of wars—of invasions. Invasions of the East by the West, and of raids north and south—raids accomplished by flying columns that dashed out from both sides of the main army. Sometimes even the invaders have fought among themselves, as for instance the Trojan War, or the civil wars of Italy, England and America; sometimes they have turned back on their tracks and, upon one pretext or another, reconquered the races behind them, as for instance Alexander's wars to the eastward, the Crusades, and Napoleon's Egyptian campaigns.

Retarded by all these obstacles, the march has been painfully slow. To move from Egypt to Greece took centuries of time. More centuries were consumed in the campaign that brought empire from Greece to Rome, and still more centuries passed before it crossed the Alps and invaded northern and western Europe.

But observe. Once across the Mississippi, the West—our Far West—was conquered in about forty years. In all the vast campaign from east to west here is the most signal victory, the swiftest, the completest, the most brilliant achievement—the wilderness subdued at a single stroke.

Now all these various fightings to the westward, these mysterious race-movements, migrations, wars and wanderings have produced their literature, distinctive, peculiar, excellent. And this literature we call epic. The Trojan War gave us the "Iliad," the "Odyssey" and the "Æneid"; the campaign

of the Greeks in Asia Minor produced the "Anabasis"; a whole cycle of literature grew from the conquest of Europe after the fall of Rome—"The Song of Roland," "The Nibelungenlied," "The Romance of the Rose," "Beowulf," "Magnusson," "The Scotch Border Ballads," "The Poem of the Cid," "The Hemskringla," "Orlando Furioso," "Jerusalem Delivered," and the like.

On this side of the Atlantic, in his clumsy, artificial way, but yet recognized as a producer of literature, Cooper has tried to chronicle the conquest of the eastern part of our country. Absurd he may be in his ideas of life and character, the art in him veneered over with charlatanism; yet the man was solemn enough and took his work seriously, and his work is literature.

Also a cycle of romance has grown up around the Civil War. The theme has had its poets to whom the public have been glad to listen. The subject is vast, noble; is in a word epic, just as the Trojan War and the Retreat of the Ten Thousand were epic.

But when at last one comes to look for the literature that sprang from and has grown up around the last great epic event in the history of civilization, the event which in spite of stupendous difficulties was consummated more swiftly, more completely, more satisfactorily than any like event since the westward migration began—I mean the conquering of the West, the subduing of the wilderness beyond the Mississippi—What has this produced in the way of literature? The dime novel! The dime novel and nothing else. The dime novel and nothing better.

The Trojan War left to posterity the character of Hector; the wars with the Saracens gave us Roland; the folklore of Iceland produced Grettir; the Scotch border poetry brought forth the Douglas; the Spanish epic the Cid. But the American epic, just as heroic, just as elemental, just as important

and as picturesque, will fade into history leaving behind no finer type, no nobler hero than Buffalo Bill.

The young Greeks sat on marble terraces overlooking the *Ægean* Sea and listened to the thunderous roll of Homer's hexameter. In the feudal castles the minstrel sang to the young boys, of Roland. The farm folk of Iceland to this very day treasure up and read to their little ones hand-written copies of the *Gretla Saga* chronicling the deeds and death of *Grettir the Strong*. But the youth of the United States learn of their epic by paying a dollar to see the "Wild West Show."

The plain truth of the matter is that we have neglected our epic—the black shame of it be on us—and no contemporaneous poet or chronicler thought it worth his while to sing the song or tell the tale of the West, because literature in the day when the West was being won was a cult indulged in by certain well-bred gentlemen in New England who looked eastward to the Old World, to the legends of England and Norway and Germany and Italy for their inspiration, and left the great, strong, honest, fearless, resolute deeds of their own countrymen to be defamed and defaced by the nameless hacks of the "yellow back" libraries.

One man,—who wrote "How Santa Claus Came to Simpson's Bar,"—one poet, one chronicler did, in fact, arise for the moment, who understood that wild, brave life and who for a time gave promise of bearing record of things seen.

One of the requirements of an epic—a true epic—is that its action must devolve upon some great national event. There was no lack of such in those fierce years after '49. Just that long and terrible journey from the Mississippi to the ocean is an epic in itself. Yet no serious attempt has ever been made by an American author to render into prose or verse this event in our history as "national" in scope, in origin and in results as the Revolution itself. The prairie schooner is as large a figure in the legends as the black ship that bore Ulysses homeward from Troy. The sea meant as much to the Argonauts of the fifties as it did to the ten thousand.

And the Alamo! There is a trumpet-call in the word; and only the look of it on the printed page is a flash of fire. But the very histories slight the deed, and to many an American, born under the same flag that the Mexican

rifles shot to ribbons on that splendid day, the word is meaningless. Yet Thermopylae was less glorious, and in comparison with that siege the investment of Troy was mere wanton riot. At the very least the Texans in that battered adobe church fought for the honor of their flag and the greater glory of their country, not for loot or the possession of the person of an adulteress. Young men are taught to consider the *Iliad*, with its butcheries, its glorification of inordinate selfishness and vanity, as a classic. Achilles, murderer, egoist, ruffian and liar, is a hero. But the name of Bowie, the name of the man who gave his life to his flag at the Alamo, is perpetuated only in the designation of a knife. Crockett is the hero only of a "funny story" about a sagacious coon; while Travis, the boy commander who did what Gordon with an empire back of him failed to do, is quietly and definitely ignored.

Because we have done nothing to get at the truth about the West, because our best writers have turned to the old country folklore and legends for their inspiration, because "melancholy harlequins" strut in fringed leggings upon the street corners, one hand held out for pennies, we have come to believe that our West, our epic, was an affair of Indians, road agents and desperadoes, and have taken no account of the brave men who stood for law and justice and liberty, and for those great ideas died by the hundreds, unknown and unsung; died that the West might be subdued, that the last stage of the march should be accomplished, that the Anglo-Saxon should fulfil his destiny and complete the cycle of the world.

The great figure of our neglected epic, the Hector of our ignored *Iliad*, is not, as the dime novels would have us believe, a lawbreaker, but a lawmaker; a fighter, it is true, as is always the case with epic figures, but a fighter for peace, a calm, grave, strong man who hated the lawbreaker as the hound hates the wolf.

He did not lounge in barrooms; he did not cheat at cards; he did not drink himself to maudlin fury; he did not "shoot at the drop of the hat." But he loved his horse, he loved his friend, he was kind to little children; he was always ready to side with the weak against the strong, with the poor against the rich. For hypocrisy and pretence, for shams and subterfuges, he had no mercy, no toler-

ance. He was too brave to lie and too strong to steal. The odds in that lawless day were ever against him; his enemies were many and his friends were few; but his face was always set bravely against evil, and fear was not in him even at the end. For such a man as this could die no quiet death in a land where law went no further than the statute books and life lay in the crook of my neighbor's forefinger.

He died in defense of an ideal, an epic hero, a legendary figure, formidable, sad. He died facing down injustice, dishonesty and crime; died "in his boots"; and the same

world that has glorified Achilles and forgotten Travis finds none so poor to do him reverence. No literature has sprung up around him—this great character native to America. He is of all the world-types the one distinctive to us—peculiar, particular and unique. He is dead and even his work is misinterpreted and misunderstood. His very memory will soon be gone, and the American epic, which on the shelves of posterity should have stood shoulder to shoulder with the "Hemskringla" and the "Tales of the Nibelungen" and the "Song of Roland," will never be written.

A CONSERVATIVE WORD OF WARNING

THE DANGER THAT OUR PRESENT RATE OF EXPANDING CREDITS MAY HAVE IN STORE FOR US—A THOROUGH REVIEW OF OUR FINANCIAL SITUATION—IS IT SOUND?

BY

FRANK A. VANDERLIP

VICE-PRESIDENT OF THE NATIONAL CITY BANK OF NEW YORK CITY

An address delivered before the Chamber of Commerce of Wilmington, North Carolina

WE are all aware that we are in a unique period of commercial, financial and industrial development. It is undoubtedly the most important, the most remarkable and the most interesting period of industrial and financial evolution in the history of the nation. We have witnessed in the last half-dozen years a commercial expansion and a financial movement alike unparalleled in the achievements of our own country or in the growth of other lands—of which I shall emphasize a few noteworthy facts.

In the domestic field we have had both a series of extraordinary crop years and a period of extraordinary industrial activity. On the agricultural side we have seen the annual value of farm products increase far over \$1,000,000,000 in the last half-dozen years, and we have seen the value of the farms themselves advance more than \$4,000,000,000 in the same time. In the industrial field we have had a period of the fullest employment of labor (except where labor has chosen to refrain from work) and of the highest general level of wages which has ever been known,

either with us or with any other people. The definite evidence of this prosperity we have seen in a doubling of the individual deposits in national banks, the total going up from roundly \$1,600,000,000 in 1896 to \$3,200,000,000 this year. In the same time the deposits of savings banks have increased \$700,000,000, the deposits of State banks \$1,000,000,000—considerably more than doubling the total of six years ago—and the deposits in trust companies also more than doubling, the increase there being \$600,000,000. In these half-dozen years the credits represented by individual deposits in banks of all classes have increased roundly \$4,000,000,000, an increase nearly equal to the total deposits of all kinds half a dozen years ago.

Bank clearings—an excellent measure of general trade—increased in these half-dozen years 150 per cent., and it is estimated that the total wealth of the country has had more than \$20,000,000,000 added to it in that period.

We have increased our coal production 100,000,000 tons, and passed easily to the

position of the greatest of coal-producing nations. We have almost trebled our production of steel leaving our competitors far behind in any comparison of volume of business. We have added \$400,000,000 to the annual product of our mining industries.

Whichever way we turn we find that the figures measuring the volume of business, the extent of industry, the growth of financial importance, have in these last half-dozen years made an apparent gain equal to the entire total six years ago. It is hardly too much to say that in six years we have doubled the figures measuring the apparent extent of our annual domestic business.

Now, for a moment, to turn from the domestic side of the account to the foreign situation. Here we have recorded gains which have given deep concern to the whole commercial world. In 1896 we passed the \$1,000,000,000 mark with our exports, and in five years more the total stood just under \$1,500,000,000. At the same time our imports were declining, so that we were not only making wonderful inroads upon foreign markets, but we were more than holding our own in our own markets in competition with foreign manufacturers. Our foreign trade balances began to show incredible totals in our favor, running up well over \$600,000,000 a year, and causing the gravest apprehension in the minds of our commercial rivals in regard to the industrial readjustment which the world must look forward to if such totals were to be maintained. In a single year we imported \$105,000,000 of gold. The world suddenly discovered that we were not alone its granary, but we were likely to become its workshop. We pushed into the foreign markets with the handiwork of our mechanics and the products of our machines, month by month increasing our sales, until from a total of less than \$200,000,000 of exports of manufactures we had soon far exceeded \$400,000,000, making increases so rapid that Europe was brought face to face with the problem of reorganization of her industries to meet this new-born competition, and a readjustment of her finances to pay for her increased purchases, which she seemed unable to offset by increased sales.

I had the privilege a year ago of meeting many of the foremost statesmen and financiers of Europe, and of discussing with them the commercial questions which had been raised

by our rapid industrial development and by our wholesale invasion of their markets. I found everywhere the problem receiving most serious attention. Everywhere it was regarded as the most vital of economic questions, and nowhere did I find anything but wonder over the development which we were showing and apprehension in regard to the effect of its continuance. Where it was to lead in its effect upon European industries and European finances, if it were to continue, was the unsolvable problem of finance ministers, bankers and industrial captains. I had the privilege of a conversation at that time with Germany's most distinguished financier and industrial upbuilder, the late Georg von Siemens—the creator of the Deutsche Bank, the adviser of the government, the originator of vast industrial enterprises. I asked him what was the future of the Old World in respect to this new industrial development and this sudden show of financial strength in America. I asked him what was to be the result, if we were to go on selling to Europe \$600,000,000 of goods a year more than we bought, increasing our exports, decreasing our imports, building up a theoretical trade balance of such totals as were new in international finance.

Herr von Siemens was a wise and an experienced man. He had passed through crises and through periods of inflation, and he viewed the outlook with calmness.

"I am not concerned about what will happen to Europe if you are to go on in this triumphal way," he told me, "because you will not go on. There will be something which will stop you. Something always does happen in such a situation as this, and something will happen now. I do not know what it is; my vision is not broad enough or clear enough to foresee it, but you will make mistakes and a halt will be called."

It is my purpose to examine somewhat critically the present industrial and financial conditions, with a view to seeing if this shrewd German observer was right, with a view to determining if something has happened to call a halt in our progress toward a command of the world's markets, and then to offer, if I can, some suggestions as to why it is that we have failed to keep up the pace and as to what can be done to remove the obstacles that are retarding our progress.

I am just back from another European trip, and have again met many of the most distinguished of European statesmen and financiers.

The change that the year has made in their point of view is extremely interesting. They are no longer fascinated by our progress. Instead of that, I found in every capital I visited, and in the mind of almost every keen observer of international affairs with whom I conversed, a belief that we have for the present marked the high-water point of our overflow of exports into the European industrial field. And instead of credulous belief in the unlimited possibilities of our development, which seemed to be the average state of mind a year ago, there is today a feeling of grave conservatism and anxious interest in our future.

They note that the rapid increase of our exports came to a halt two years ago. They note that our imports in the last two years have been rapidly rising, the record for the fiscal year just closed being more than \$900,000,000, against only a little over \$600,000,000 in 1898. They note, too, that in spite of that tremendous balance of trade which government reports showed in our favor, a balance running, as I have said, up to an average of almost \$600,000,000 a year, we do not seem to have any unusual command upon international credits, but we are as a matter of fact a considerable debtor in the world's exchanges, and that now, in the midst of extraordinarily bountiful harvests, and at the season when a movement of gold in this direction might normally be expected, we are concerned lest a high rate of sterling shall lead to gold exports.

If we are honest with ourselves, we must admit that the edge is off our invasion of foreign markets. Our totals are still colossal, but the rate of increase which they were making has been checked, and decreases have been recorded. Our exports of manufactures for the fiscal year just closed are \$30,000,000 less than the point they reached two years ago. Our total exports of domestic merchandise fell off more than \$100,000,000 in the year. Instead of decreasing exports we have made some large increases in our purchases of foreign goods, and the total for this fiscal year stands more than \$300,000,000 above 1899.

If we chose to examine critically our domestic condition we might find there, too, developments not in every respect satisfactory. It must be with the keenest regret that we recognize unfavorable conditions that threaten

a break in the unparalleled magnificence of this story of industrial growth. Nothing will better repay thought and study than inquiry into those causes, which seem to imperil a continuance of this wonderful period of prosperity. Nor can any investigation be of more vital importance than a consideration of what safeguards it is possible for us to provide, against the recurrence of these cycles of depression which seem always to follow periods of prosperity.

It is not my purpose, however, to dwell upon some of the evidences of inflation, upon a too free issue of securities larger than the value of properties warrant and more rapid in creation than investors can absorb, nor upon labor conditions fraught with serious menace which already mark their effect upon industrial totals. Instead of a broad survey of the whole situation, I wish to take up a single phase of it, a phase which has been well illustrated by a recent episode in financial affairs.

The Comptroller of the Currency, a few days ago, completed his report showing the condition of all national banks last month. That report, it seems to me, is one of the most significant that has in a long time come from the Comptroller's office, and it will well bear some analysis and comparison. If we are merely looking for large totals, we may again find them here, figures in some respects surpassing all previous records. The total deposits, individual, bank and government, in all national banks, foot up \$4,527,000,000. Now, if we turn back to a similar report for the beginning of 1899, we will find the total of the same items \$3,226,000,000. Now, for a moment, bear these figures in mind. Roughly, \$4,500,000,000 deposits now, against \$3,200,000,000 in 1899—and with that increase in the liabilities of national banks in mind, let us look at the figures representing the reserve basis. The total of specie and legal tenders held by the national banks last month was \$508,000,000. The total at the beginning of 1899 was \$509,000,000. Here we have had an expansion of \$1,300,000,000 in deposits, while the basis of gold and legal tenders upon which that inverted pyramid stands is actually slightly smaller than it was at the beginning of the period. Now, in that same time the deposits of other banks—State banks, trust companies, savings banks, and private

banks—have probably increased not far from \$3,000,000,000, and there is little likelihood that their gold and legal tender reserve is materially larger than—if it is as large as—at the beginning of 1899. We have had, then, in less than four years, an increase in the total bank deposits of the country of over \$4,000,000,000, accompanied by no increase in the specie and legal tender holdings of those banks.

What has brought about this remarkable development of bank credit? The answer must at once come to the mind of any observer of finance, that the principal reason for the expansion of deposits and the accompanying expansion of loans is to be found in the great movement which has been the significant feature in financial affairs of the last half-dozen years—the movement to aggregate industrial establishments into single great corporate units, and to convert the evidence of ownership into corporate securities which have entered actively into the stream of financial operations. Vast amounts of new securities have been created in these half-dozen years, based in large measure upon properties which were before held as fixed investments by individuals, or if standing in the form of corporate property the securities of those corporations were more closely held, and in but small measure entered into the financial operations of the day. This movement—tending to convert the evidence of ownership of a great amount of fixed property into a form which has been considered a bank collateral, and which has been made the basis of loans and of corresponding increases of deposits—is undoubtedly the most important single cause for this increase of more than \$4,000,000,000 in bank deposits and bank loans of the country in the space of three or four years.

Another important contributing influence has been the vast expenditures of corporations—railroad companies particularly—for the improvement, betterment and extension of their properties. New securities have been created, and the capital which was obtained by their sale has been converted into a fixed form of investment. When our railroads were first built economy in construction was the prime consideration. Now it has come to be that economy in operation is demanded. At first it was economy in the use of capital; now it is economy in the use of labor. And so we have seen, not only with the railroads,

but in every department of industry, a lavish investment of capital in order that the cost of production might be cheapened.

Now let us suppose that all this great expenditure has been wisely made, and in the main I believe that it has, that every dollar which has been expended in the improvement and betterment of railroads, in the extension and better equipment of industries, will effect economies which will result in a saving equal to a fair interest return on the capital so invested. But, granting that the investment, from that point of view, has been wise, a consideration which we have perhaps in some measure lost sight of is that this whole great movement of improvements and betterments has been drawing from the fund such liquid capital and converting it into a fixed form, so that such capital cannot be fully returned into liquid shape, from the result of increased earnings, before the next ten or fifteen years.

If a farmer were to ask a country bank to loan him \$10,000 to put up new buildings and generally improve his property, the banker, while admitting that the expenditure might be a profitable one in the added return which the farm would give, would say that the proposal was not a good banking proposition—that bank funds could not properly be tied up in an investment of that character, but must be loaned for objects which, in the natural order of the commercial season's progress, would liquidate the debt in a much shorter time than would be possible were the capital to be converted into such a fixed form of investment. Recognizing this principle, the National Banking Act very wisely prohibits loaning upon real estate. Sound as the security is, it is not within the lines of the banking principle which embodies the practice of making only such loans as will in the natural order of business liquidate themselves within a few months.

If a railway manager were to ask from his larger bankers a \$1,000,000 loan to put into better bridges and heavier track, the same answer would be made. It would be unwise for a bank so to tie up active capital by converting it into a fixed form of investment. Profitable as the banker might be convinced the investment would be in the greater economies which it would bring to the operation of the railroad, he would see that it would be unwise financing for him to

loan his deposits for conversion into a fixed form of investment which could not be liquidated should his depositors begin to reduce their deposit lines. Securities issued for just such purposes, however, form much of the basis of this increase of \$4,000,000,000 of loans. The loans are excellent so long as A. can sell his collateral to B. should A. be called upon to repay, but if A. and B. should both be called upon to pay, there is nothing in the nature of these loans which will permit them rapidly to work out toward liquidation in the natural order of things. It is, in effect, a loaning of bank credit for conversion into a fixed form of property.

If, say, two-thirds of the total income from industrial investments were to be returned to the betterment of properties, and there should be issued in place of the capital so spent additional securities, the process would be wise and beneficial. If, on the other hand, there should be converted into the form of fixed property by expenditures for improvements and betterments a total amount of capital considerably exceeding the total annual income from such investments, the result in the end could lead only to disaster, no matter how wisely these expenditures for betterments and improvements might be made—because in the process there would be absorbed a larger and larger amount of liquid capital into the form of fixed investment, banking reserves would be reduced, and when bank deposits were demanded, though there might be the soundest of security back of them, it would be in a fixed form unavailable for liquidating the debts due to depositors.

It must be admitted, I believe, that we have been converting too great an amount of liquid capital into fixed forms of investment. What is the cure? The cure is, of course, to reduce the expenditures of that character so that they will come within the line of safety. What is the line of safety? It is, it seems to me, something well within the total income from such investments. If we go beyond it—if we convert into fixed forms of property more than the total income from the property—we have gone beyond the line of safety and are borrowing from the future temporarily to bury the capital. We have the choice of one of two things: Either to practise wise discretion or to go on borrowing of the future until we are brought up against a wall. The first course is consistent with continued pros-

perity, even if we do, to some extent, reduce the expenditure of capital for new construction, extensions and betterments. The second course, if persisted in, will bring confusion, disorder and paralysis on the whole constructive investment.

Another phase of this situation, and one which has aggravated the causes leading to an expansion of loans, and which has cut off from us the relief which we hoped for in the way of a foreign trade balance made tangible by gold imports, has been the rapidity and extent of the advance in prices. Back in 1895 and 1896 we were on a low level of prices, and we were imbued with economical ideas of administration. It was then that we began making great inroads into foreign markets and our exports had passed the \$1,000,000,000 mark. In 1898 our exports had so increased and our imports so decreased that we had a balance in our favor of more than \$600,000,000, and that balance was tangibly reflected that year in a net importation of \$105,000,000 of gold. Then prices began to rise, the total of our exports did not hold up the next year, while our imports began to show a marked increase. In the subsequent years we were fortunate in exceptionally favorable agricultural conditions, of bountiful harvests at home and scantily filled granaries abroad, so that our exports showed some further increases; but our imports went up more rapidly than did our exports until, in the fiscal year just closed, we showed a total of imports nearly \$300,000,000 more than in 1898.

The whole general level of prices has advanced, and some of these advances, from the extreme low level of 1897 or 1898 to the high level which has been reached within the last two years, are the sharpest in our commercial history. Pig iron, for instance, advanced from less than \$12 a ton in October, 1898, to \$25 at the beginning of 1900. Steel rails doubled in the same period, the price going up from \$17.50 to \$35. Bar iron scored even a greater percentage of gain within a shorter time, the price advancing from 95c. a hundred in July, 1897, to \$2.60 in October, 1899. The quotation for clear pine boards has advanced from \$45 to \$73 a thousand; for brick, from \$4.50 to \$6; rope, from 5¼c. to 13c.; and salt, from 21c. to \$1. Take the advance of some of the Southern products in that same period. We see linseed oil marked

up from 29c. to 68c.; turpentine from 26c. to 50c.; molasses from 28c. to 55c.

These extreme advances in prices have not been fully maintained, but the present level of market quotations is still 50 to 80 per cent. above prices in 1897 and 1898 for many commodities.

So the list might be continued. These examples are extreme, and the low level was probably unduly depressed. But they tell the story of why our exports have failed to go on increasing, and they have been an important influence in the inflation of bank credits.

When a railroad company had to pay \$35 a ton, as against \$17.50, for steel rails, its improvements become relatively very costly and its issues of securities against permanent betterments must be on a much more liberal scale. The cost of production in every direction has been increased until we find ourselves actually importing from some of the identical markets that two or three years ago were in a panic over our invasion.

Prices of securities advanced along with other prices, and attracted the holdings of foreign investors, until we swept the continent of Europe almost clean of our stocks and bonds, and greatly reduced the holdings of English investors.

We still had an ample total of excess of exports, however, and out of our favorable trade balance we could pay for reams of securities and still have something left. We did not stop at buying our own securities, but began making great foreign investments, to the astonishment of the financial world, turning the tables upon Europe and sending a great stream of credit for investment there. The result was that by the year 1900, in spite of a nominal foreign trade balance of nearly \$550,000,000 in our favor, the net result of the gold movement that year was an export of about \$4,000,000. The next year we brought in a few more millions of gold than we sent out, and we did the same last year, but since 1898 there has been, in spite of the theoretical trade balance, no significant shipment of gold in our direction.

There has, however, been a movement in international finance which is not reflected in the customs statements. We have been building up a floating debt to Europe, made up of borrowings in the form of short-time bills. The exact total of that floating indebtedness

at the present time is one of the difficult problems of finance, but it must be very large. I have heard it estimated by financiers in foreign capitals as high as \$200,000,000 to \$300,000,000. That estimate, I believe, is far too high; but, even so, the total we must admit is important.

Particularly is it important in view of the statistics of bank reserves, to which I have before referred. In 1899 the national banks held 33 per cent. of reserve. In their vaults was a good part of the \$105,000,000 of gold which had come in from abroad the preceding year. It was this excess of reserve which permitted loans to expand \$1,300,000,000 since that date without adding a dollar to the stock in the bank vaults of specie and legal tenders. But now we have gone to the limit in that respect. This last report shows less than 21 per cent. of reserve for all the national banks of the country. Not one of the three central reserve cities was up to the legal limit. Twenty-two of thirty other reserve cities were below the legal limit.

We have seen what a great expansion of deposits and loans, both, remember, almost wholly but evidences of bank credit, could follow the increase in the reserve basis that came with the gold importations of 1897 and 1898. We see from this last statement of the Comptroller that the expansion has reached the utmost limit possible with the present basis of specie and legal tenders. Is it not well to ask, What of the future? If a \$100,000,000 importation of gold can serve as a basis for an expansion of so many millions of deposits and loans, what will an exportation of \$100,000,000 mean? Will not the answer lead us to ponder on the probable effect of future gold movements? Does our foreign commerce give promise of a trade balance great enough again to induce gold to flow in this direction? Let us examine recent records. For the first nine months of this year our imports increased over last year \$56,000,000, and it must be remembered that the total imports for last year were \$300,000,000 more than in 1898. On the other side of the book, our exports for the nine months of this year decreased \$108,000,000, so that the record for the nine months shows a net balance of \$164,000,000 more unfavorable than the corresponding nine months of the previous year. In the same time we have lost

\$8,000,000 of gold. For the twelve months ending with September our favorable trade balance was \$420,000,000, against \$641,000,000 for the previous twelve months, a decrease of \$221,000,000.

The evidences, then, of advancing prices that check exportation and increase importation, the absorption of our favorable trade balance in foreign investments and in the repurchase of securities, the uncertain totals of our floating indebtedness represented by short-time finance bills, all taken in connection with the fact that any reduction of the specie reserve held by banks must be followed by liquidation which will again establish the proper relation between reserve and deposit liability, would seem at least to point to the conclusion that this is not a time favorable for the expansion of bank credits.

I wish by no means to present an alarming view of the outlook. What I do wish to do is merely to sound a conservative note of warning. I believe there are in the situation tendencies in which are elements of possible danger. On the other hand, I by no means forget the long list of favorable conditions upon the opposite side of the account. I have the most absolute faith in our ultimate

commercial ascendancy. I believe no one who has carefully studied industrial conditions in this country and in Europe can reach a conclusion unfavorable to the prospect of our own progress. We have the cheapest and most nearly inexhaustible supply of raw material, the greatest genius in the handling of machinery for its conversion into manufactured products, the broadest single homogeneous market in the world upon which to base substantial domestic business, which will serve as a foundation for foreign commercial conquest. We have numerous advantages over our competitors, and in the end the combined effect of these advantages is absolutely certain to place us foremost in the world's commercial ranks. It is in no wise opposed to this view of ultimate commercial supremacy—a view which no one more strongly holds than I do—that I have pointed out conditions which I believe, if not guarded against, will threaten for the time being our continued progress toward that goal. A judicious recognition of the restricting conditions now visible in our financial situation may save us from disaster and humiliation later on—a humiliation from which recovery will be slow and painful.

VIEWS OF READERS ON RECENT BOOKS

THE WORLD'S WORK sent a letter to some of its literary friends asking them what recent books they had read with the greatest pleasure and profit, and requesting that their replies be after the manner of a personal letter. Some of these replies are as follows:

HENRY D. SEDGWICK, JR.:

Of all the books I have read lately, neither a very large nor a very miscellaneous company, the one which makes me most glad that it has been written is Mr. William James's "The Varieties of Religious Experiences." In the first place, Mr. James is the only master of prose whom we have in America, where the lack of early Greek training leaves most of us at the mercy of the commercial idiom; and, in the second

place, his is the voice which gives utterance to ideas that, however vaguely apprehended and crudely held, are yet widespread and serious. Our religious beliefs, our religious life, if they are destined to any quickening, must receive fresh vitality and health from these or similar ideas; but so long as the people who held them were both dumb and also outside the pale of scientific sympathy, and, one might add, of scientific politeness, their ideas were useless to anybody except themselves. Today in Mr. James those people and that body of thought have a spokesman whose scientific reputation is unassailable, whose prose will travel farther and quicker than that of their adversaries, whose personality, so conspicuous in his pages, is a most persuasive argument. It is an odd turn of fortune's wheel that brings once more out of Harvard University, for so long a time

a hotbed of anti-religious thought, a leader, perhaps the chief leader of enlightened religious thought in America.

Mr. Scudder's "Life of James Russell Lowell" is the most interesting American biography I have read. Its goodness is due in part to Mr. Scudder's skill and tact, and in part to the exceptional position which Lowell held among distinguished Americans. He lived at a time when Massachusetts was the leading State in the Union, and he was an excellent representative of her morality, her intelligence and her conservatism. In the period which ended with Emerson's death, Massachusetts embodied an American edition, as it were, of English ideas and traditions, of English civilization in short, with modifications of course, but not such marked modifications as were at one time thought, and Lowell is a characteristic Massachusetts Yankee. Now America has become American, whether that be a gain or a loss, and her leading commonwealths are no longer under the direct influence of English tradition, and Mr. Lowell has stepped into his historical niche as a figure of a past epoch. Mr. Scudder wrote with admiration, with sympathy, with justice, and described the romantic period of Lowell's fervent youth, the time in any man's life most worth the reading, with the grace and refinement habitual to him. The best praise I can give the book is to say that it awakened my first feelings of admiration and liking for Lowell.

ALBERT BIGELOW PAINE:

As usual I am a belated reader of certain books that for a year or more a goodly number of worthy persons have been insisting are quite worth while. As usual I have become convinced that these worthy readers have reason for their complimentary conclusions.

Take, for instance, the "Cabbage Patch." The humanity of Mrs. Wiggs goes straight from her heart to the reader's, and the matter of a little artistic crudity, more or less, counts but poorly against tears that creep out unawares and laughter that rings true.

Then there is that great—that almost ponderous—book, the "Octopus." Long it certainly is—filled with careful, almost minute descriptive passages that the author works out with a lavish wealth of word and color, and is prone to repeat later, either in sentence or paragraph; but above and beyond all that is the glory of its wonderful picture of California with the wealth and mightiness of its product, with the play and passion of its struggle and its upbuilding—the struggle and the upbuilding of the West. Artistic faults

are here, too, but rather from an overabundance of art than from any lack of it. Mighty in conception, Titanic in execution, no other such book has been produced in a generation.

I have likewise read "Kim." There are no flaws in Kipling's art. He is the great master of technique, and for the writer there is strong literary stimulant on every page. As the "Octopus" is a great canvas of California, so is "Kim" of India—a wonderful panorama of the under side of Hind. If it be not true, if it be only an illusion that this great Yogi of letters has prepared for our entertainment, then at least it is perfect in its deception, which, from the literary point of view, is equally to the purpose. The ending? Yes, I had expected that it would end with the death of the Lama, and Kim going forth into the world alone. But Kipling, the great master, did not do this, and he must have known why.

Remembering "Kim," recalls a book for those who, as Kipling's Lama would say, are "bound on the Wheel—of Things" and who "seek the Way." The "Kingdom of the Invisible," by Mary Platt Parmele, is a very small book—a short paper, in fact, read before the Wednesday Afternoon Club, but it contains the vital gist of whatever has resulted from investigation and progress along the paths of new science, pointed out by such pioneers as Spencer and Tyndall and illuminated by the Roentgen ray. The union of science and religion is the ideal consummation. The sorest of human needs is analytical proof of immortality. Perhaps we have not achieved these greater triumphs, but the way to them grows plainer, and to those still groping this little book may prove such a *chela* as was Kim, who led the holy lama to the little River of Peace that flowed through the gardens behind Saharanpore.

SARAH BEAUMONT KENNEDY:

There are certain books with so human a touch that in the reading they become as personal friends. Four such volumes lie on the corner of my table waiting to be transferred to the bookshelves, and with each of them I am loath to part.

"The Misdemeanors of Nancy," by Eleanor Hoyt, made of life a bubbling spring of laughter for an entire morning. This girl "with the Kentucky impulses and the New Hampshire conscience," telling her misdemeanors or flirtations to "the man who came often," is so deliciously entertaining that at the last page I bade her good-by reluctantly, saying, as one says to a delightful visitor, "Good-by, Nancy; come again."

The second book in my pile is also by a

woman. In "Amos Holmes," the old miller who says that "he and the old century came in together on an ox-cart and are going out together on a streak of lightning," Annie Fellows Johnston has drawn an indelible picture. . . . From the fine, well-seasoned character of Amos, through the coterie of rural philosophers in jean trousers and raw-hide boots who congregate in the cross-roads store, down to "Perkins' oldest" trying vainly to establish a connection between the signs of the zodiac and the disemboweled gentleman they surround—in all the little company there is not a character that does not bear the stamp of nature.

In Ellen Thorneycroft Fowler's "Fuel of Fire" there is no one who equals the Lady Silverhampton of her other stories. To my way of thinking, Lady Silverhampton is the brightest and most vivacious woman who flashes through the pages of recent fiction, and it is a disappointment not to meet her again in this new story. As a novel, "Fuel of Fire" is scarcely up to the author's standard; but Miss Fowler can never be anything but delightful in her characterizations and dialogues; and with Nancy Burton dropping epigrams as that fabled princess dropped diamonds and pearls when she spoke, and with Lady Alicia setting up her cheap sentimentalities in such serious form and patronizing "dear Shakespeare" and "dear St. Paul," I did not lack for entertainment from cover to cover of the book. Miss Fowler is one of the few authors who bear reading twice.

And now I have come to the last of my four printed friends—and the last is by no means the least. In "The Right of Way" Gilbert Parker satisfies the reader's thirst for originality of conception and boldness of execution. Full of dramatic situations, the most dramatic of them all—probably the most dramatic touch in all modern literature—is in the death scene, where the hero, with his old daredevil spirit triumphing to the end, says to the wavering death-shadow he sees in his fevered fancy: "I beg your pardon—but—have I ever been—introduced to you?" The book had two other logical endings, but it was well worth the sacrifice of the logical to secure that thrilling scene. Gilbert Parker is a master of situations.

JOEL CHANDLER HARRIS:

In trying to remember the recent books that have made an impression upon me, it will be best to confess that every book I read makes an impression more or less lasting. But one of the most recent books, and one the effects of which are the most vivid, is "The Fortunes of Oliver Horn" by Mr. F. Hopkinson

Smith. The narrative is the least important thing, but the characters stand out as do the figures in a painting, strong, clear, powerful. Another book on parallel lines is the story of "Aladdin O'Brien," which is vigorously wrought out, and in which the dramatic effects are complete. It is in order for the older hands, who never had any vigor or who have lost it if they had, to pout a little when they are confronted by things done by those who have youth at their elbows.

Another book that has given me great pleasure, and that has been a treat to some little girls of my acquaintance, is the story of *Ennuy Lou*. I don't recall the title, and the book is not at hand, but it is a very beautiful study of childhood, and not less beautiful for its realism. The man who knows childhood completely knows everything that is worth knowing.

Along with this should be mentioned Mr. Mowbray's "Journey to Nature," where the boy is pictured forth with such exquisite ease, and where the young woman is made to shine in all her native simplicity. I don't know why, but Mr. Mowbray's method of handling his material reminds me of a series of acute social studies which appeared in the *New York World* when Manton Marble was editor.

I must not forget Booker Washington's autobiography, which is a very strong book. I could wish that everybody at the North could read everything Booker Washington writes or says. There is great need of education in that section with respect to the real relations between the men that represent the Negroes and the men that represent the South.

Then there is "The Quiet Life," by Charles Wagner, which interested me very much. But something in it (I have never been able to decide what it is) jarred on me and left a bitter taste in my mouth. Yet it is a book full of the largest and most important truths.

In "The Heroines of Fiction," Mr. Howells gives some delightful pictures in the way of comment or criticism. You may not agree with everything he says, but you are certain to agree with the way he says it, and you are certain to admire his catholicity of taste. I commend his book to young women who have not the opportunity to read all the books in which the heroines are embalmed. In introducing them to modern readers, he covers the whole ground of English fiction, and presents the young women in a way that is delightful.

And now, if you please, I will return to the works of the late Mr. Charles Reade. I was deep in "The Cloister and the Hearth" when you interrupted me.



AN AMERICAN IRON-WORKER IN CENTRAL AMERICA

ON the wave of American activity that pulsed round the world in the Spring of last year went an iron-worker from New York to a Central American republic. His task was to superintend the iron work of an American building going up by no plans more definite, he asserted afterward, than a wash drawing of how the structure would look when completed, and under the direction of an engineer whose books said a foot of concrete would support 30 tons, without telling what would support the concrete. Thus it came about that the concrete foundation was set on the top of the ground—and made ground at that. The iron frame-work had not twisted very far out of plumb, as the concrete sank, when the engineer resigned and the iron-worker foreman was made construction boss, inheriting the prophetic wash drawing, by this time somewhat soiled, and a very pretty problem.

"I am a housesmith and bridge builder," said he to the company's superintendent, "but if you say 'Tackle the whole thing,' why, I'll tackle it."

And he did. He was then but thirty, with the blackest of hair: he is thirty-one now, and his hair is gray.

"Hot!" said he, "the sun is only about a foot above your head down there! And in the rainy season the water comes up to your chin! And trouble—there is nothing but trouble."

His first task was to jack the building up and put in new foundations fifteen feet deep. He discharged the other American foremen, chiefly because they were poor workmen and incidentally because they fought one day. Then he turned architect and engineer, making his own plans as he went along. Later by turns he became boss mason, boss carpenter, boss plumber, boss blacksmith, forced by inefficient native foremen to oversee every petty detail.

Two hundred negroes and fifty peons were

his workmen—the peons from the interior dying like flies of the fevers in that swampy coast-land: yellow fever and black water fever, with malaria as the normal state of health between the attacks. He took the yellow fever himself, and after walking four miles to hospital under a broiling sun, with his temperature at 103, returned to work in a week, just in time to see a peon holding the guy rope of a gin-pole drop the rope to light a cigarette, while the gin-pole majestically toppled over and broke.

"I'se a carpentah, boss," would plead one of the itinerant negroes that voyage about the Indies and through the Isthmus in search of work.

"I don't need a carpenter."

"Well, sah, I'se served mah time as a blacksmith in the Barbadoes."

"Nor a blacksmith."

"But I'se a mason, too."

"I don't need a mason; I want an electrical engineer."

"Well, sah, I learned that profession in Jamaica."

"All right. Take that hod and go to work. You'll find the mortar over there."

This was the formula. No negro lacked verbal education; no negro was ignorant of any trade or profession nameable; and all were lazy and unteachable. All of them claimed to be "English gentlemen, sah," and "mistahed" one another. If back pay was forthcoming, they considered discharge a joke. It is no uncommon thing for foremen to coerce them with revolvers; one foreman, a little cold-blooded man from Alabama, had moved from the west coast of the Isthmus clear around South America to the east coast, "leaving," his reputation ran, "a trail of dead niggers behind him." But the iron-worker kept his revolver dumb, and discharged the workmen in squads. In the year and four months the work lasted the gang of 250 represented between 4,000 and 5,000 different men.

To add to fever and heat and exasperat-

ing workmen came revolutions. In one the President called for volunteers. Away from a nearby ranch marched forty peons headed by the overseer, who carried this note: "I send forty volunteers. Please return the rope." A few days later the alcalde of the town sent a file of his barefooted soldiers, armed with old Remington rifles longer than the men, and long-barreled pistols hung so low in the middle of the back that they gave a ludicrous suggestion of tails, and arrested all the iron-worker's peons. Building stopped. All that day came official reports of a battle at the capital: first "150 dead and 400 wounded;" later "800 dead and impossible to count the wounded." Next day's more accurate report showed two killed and none wounded. The battle had consisted of penning a handful of insurgents in a building and shooting all day at the stone walls with an old Spanish bronze cannon loaded with American wire nails. At six the insurgents surrendered on the plea that they were willing to die for liberty, but that going without supper was not nominated in the bond. Thus ended the revolution. The following day the peons returned to work.

And so it went. The framework proved to be too slight and when the building was all up the beams began to give and bend under the weight. That meant a thorough strengthening of the frame with patches and new beams—not an easy problem at that stage of the construction. Then at the very last the iron-worker received notice for the first time that the company had "planned" to have three large water tanks in the top of the building—there was more tearing up of old work and more strengthening of the frame.

But it was finished at last. "It took," said he, "250 men sixteen months. Properly planned, 100 American workmen could have done it in three."

TELEPHONING THROUGH THE EARTH

FOLLOWING directly on Marconi's wireless experiments and success come with peculiar interest the achievements of Mr. James Tarbotton Armstrong, a well-known London engineer.

The man who shares the credit of these developments of wireless telegraphy and the discovery of the wireless telephone with Mr. Armstrong, is Mr. Axel Orling, a young Swedish electrician. He is two years younger than Marconi, to whom, inevitably, he has been described as a rival. Mr. Armstrong is a Devon man in the prime of life, energetic, enthusiastic, full of schemes. Messrs. Armstrong and Orling appear to have stumbled across their system of wireless telegraphy

while at work on something else. They met first about five years ago. Mr. Orling's fame as the "Edison of Sweden" had reached Mr. Armstrong, who secured him to work upon certain experiments. One Saturday afternoon three years ago they were busy experimenting with electric light, when Mr. Armstrong suggested that, with the extraordinary power they were getting, it would be well to try whether they could not send electrical impulses through the ground for telegraphic purposes. The success of the experiment marked the beginning of what are known as the "Armori" discoveries—this word being derived, of course, from the first syllable of each of the inventors' names.

A familiar illustration will explain the theory of the discoveries. Cast a stone into a pond, and you start circles which grow ever wider till they reach the bank. As a pond is full of water, so is the earth full of electricity. Messrs. Armstrong and Orling found it possible to start the electricity in the earth into waves by a slight impulse. Briefly put, therefore, their system consists of tapping the ground and sending electrical impulses by means of a specially constructed transmitter to a very sensitive receiver. In the transmitter and receiver lie the secrets of their invention.

The Armori system of wireless telegraphy was publicly exhibited last autumn at Desburga, Mr. Armstrong's residence on the north-east confines of Highelden parish. Besides utilizing the earth as a conductor, the system is distinguished from others by the fact that the currents discharged are of very low potential. A current of eight volts is more than sufficient to transmit a message twenty miles; it has actually been done with a current of only four volts. Another advantage the Armori system claims over the Marconi is that an elaborate apparatus is not necessary, there are no induction coils, coherers, or high masts. The whole apparatus weighs five or six pounds, and can be put into a little box. It comprises a receiver and a small battery packed in a case, having two contact screws on the outside. Two pointed iron stakes are driven into the ground to a depth of about eighteen inches and about twelve feet apart. To each of these is attached a wire connecting respectively the negative and positive poles of the instrument. A small key similar to that used for dispatching Morse code signals is attached, together with a telephone receiver. The current thus set up flows through these wires and stakes into the ground. The operator holds a telephone receiver to his ear with one hand, while with the other he transmits

the message in the ordinary dots and dashes. At the opposite station similar iron stakes are placed to receive the impulses, and here, if necessary, the receiver can be connected to a Morse tape-printing machine, and the messages printed as they are received.

The important thing is the receiver, which supplants the "coherer." It is an electro-capillary relay, by means of which the most feeble impulses are able to operate a receiving apparatus, the operation depending upon the electro-capillary force exerted at the surfaces in contact of certain dissimilar fluid conductors when an electric current passes from one to the other.

For long-distance telegraphy—that is to say, beyond twenty miles—the air is used as a conductor, but here again superiority is claimed for the Armstrong-Orling system. "Whereas the best relay in the market with eight volts is equal to a transmission of 1,699 miles," says Mr. Armstrong, "ours is equal to one of 12,990." It has not actually been tested over that distance, but it has been tested by opposing to it a resistance equal to that distance. There are, therefore, the two systems of wireless telegraphy—a ground system for short distances, and the ordinary pole system of spark telegraphy for long distances. But the poles in this case are only one-tenth the height of those employed by Marconi; and it is also claimed that a hundred letters can be sent in the time needed by Signor Marconi for sending thirty-six. "Our 'coherers' are so much more sensitive than his," says Mr. Armstrong; "and where he can send a message a hundred miles, we can send one a thousand. We are able to take up impulses, through the sensitiveness of our apparatus, that no other system can take up." Marconi uses the Hertzian waves, and Hertz's apparatus for receiving them. Messrs. Orling and Armstrong receive the Hertzian waves by a receiver designed by themselves.

A WIRELESS TELEPHONE

THE wireless telephone—perhaps of all the Armstrong-Orling inventions the one most likely to affect the general public—is a later adaptation of the same system, and represents a great addition which the inventors made in the interval to the power of their transmitter and the sensitiveness of their receiver. Compared with present-day telephones, it recommends itself on the ground of cheapness and simplicity. The transmitter consists of a wooden pedestal twelve inches high, surmounted by a dial of thin wood, behind which are microphones. Under the pedestal is a network of switches, screws and

wires. In addition, there is a small bar with four brass screws and four wires; the screws are marked E1, b, B, and E2—the letter E denoting "earth," and B "battery." Two wires are connected to B and then to the battery—an ordinary primary battery—and two wires to E1 and E2; and the latter are then run a foot or so into the earth. Five miles away the other man does exactly the same thing, with a precisely similar apparatus. You press a button, a bell rings at the other end, and the conversation begins. The instruments are sent out in pairs, each instrument having its affinity. "It is," Mr. Armstrong explains, "solely a question of vibrations." A tuning fork pitched to C will, if set vibrating, vibrate another tuning fork pitched to C, but will leave one pitched to D unaffected.

I asked Mr. Armstrong how the presence of many instruments together in a city will affect the efficiency of the system. "Suppose," he replied, "an exchange as the centre for hundreds of instruments. They are all varied in their vibrations. Suppose you want to call me up, and I vibrate at 10,000, you at 5,000. You call up the exchange, and either you are raised to 10,000 vibrations or I am brought down to 5,000, and we are at once in sympathy with each other and can speak. Even a private installation is capable of, say, half a dozen variations of vibrations; thus six places may be at your call. But beyond that, the mechanism might be too complicated for a private installation, and you would have to speak through the exchange." The capacity of the telephone is not determined by the intervening space; a greater distance can be covered according as the transmitter is made more powerful and the receiver more sensitive.

WIRELESS INVENTIONS IN NAVAL WARFARE

AS factors to be reckoned with in the naval warfare of the future, the Armstrong-Orling inventions have won great praise from an authority so high as Sir William Laird Clowes, the historian of the British Navy. "Cheap and simple in application," says this expert, "requiring no expensive or permanent installation, being independent of atmospheric conditions and material instructions, and working through earth and water instead of through air, they should revolutionize naval signaling, especially in fleets. They should also open a new era in submarine mining and countermining, and lead to the displacement both of the Whitehead and other automobile torpedoes, and of submarine boats in favor of controllable weapons manipulated from a distance without the intervention of wires."

They furnish, for example, among other things, an improved means of propagating electrical impulses and of giving them a definite character; an efficacious means of restoring the detectors to their normal condition after the reception of such impulses; and means by which a torpedo or other craft may be caused automatically to follow the course of a beam of rays.

A practical demonstration of controlling a torpedo by these means took place at Stockholm four years ago, in the presence of King Oscar, and in 1900 an "actinaut"—a vessel so propelled and steered—was run successfully at Portsmouth over a distance of three miles. The name "actinaut" seems to have been applied first by Sir William Laird Clowes, who derives it from the circumstance "that the actinaut is to the dianemic torpedo what wireless telegraphy is to the older telegraphy." The actinaut is very small, containing only her engine, power chamber, steering mechanism and explosive head; she is shaped for great speed; the depth at which she is to strike a doomed vessel is about ten feet, and that is her constant depth when running. Mr. Armstrong described as follows the best means of installing a system of coast defense, and the same, he says, will apply with very small modification if worked from a ship.

(It is suggested that the actinaut is even capable of being controlled from a balloon.) It should be explained that the apparatus worked by the controller measures only nineteen inches long, by seven inches broad, by eight high.

"Supposing," says Mr. Armstrong, "that at the Coast Guard station, say for instance at the top of the cliffs at Dover, there is placed the apparatus necessary to guide the actinaut. Out at sea or in the harbor are anchored several actinauts. An enemy's ship is seen advancing, say from the French coast, and as soon as the operator (who is well trained) thinks fit, a button is touched and this immediately releases an actinaut, and at the same time starts her machinery. The operator simply guides her by means of invisible radiation, entirely under his control till she strikes the vessel, but another operator can at the same time be working another actinaut having the same object in view, without in any way interfering with the first one, or a third operator can be directing still another actinaut to another vessel, if one is seen approaching. Supposing now it is thought best not to allow the actinaut to follow the ship—she can be brought back to any station or ship." Needless to say, the actinaut has been brought to the notice of the British Admiralty. At the

time of writing, also, the Navy Department of the United States is engaged in testing the Armstrong-Orling inventions.

Another and vastly important application of the system enables ships to learn automatically whether they are near to the coast, and if so, to what coast. The value of this during foggy weather or on dark nights needs no emphasizing; it would also obviate the danger peculiar to small vessels where no special watch is kept. A ship is supplied (at the cost of a few dollars) with a transmitter and a receiver; a similar apparatus is placed on the shore (or on a lighthouse or a lightship); both can be set for one, two, three or more miles, as may be required by the coast authorities. Immediately the ship comes within this radius it is made aware of the fact by its instrument, and can communicate with the shore. This can also be applied to "ships that pass in the night" in midocean, enabling them to "speak" each other. Other uses of the system embrace railway and fire-alarm signaling—it is capable of lighting and extinguishing a light from a distance of several miles; and the explosion of mines.

It is, however, in the private and commercial spheres of life that these inventions will doubtless find their widest scope for the present. Inquiries have come to the makers from all parts with regard to installations. It will indeed be a revolution when the unsightly overhead wires disappear, and when one is no longer confronted with the "no passing" for telephone repairs.

Suppose—from the point of view of diversion, if you like—you have one of these telephones in your dining-room. Your neighbor, accompanied by a boy carrying two crowbars and a sledgehammer, walks into his garden; the two crowbars are driven into the ground to a depth of a few inches, about twelve feet apart, and the wires are fastened to them. Without further ado, he converses with you with the greatest ease. This at least will convey an idea of how convenient, how matter-of-course, how much a part of every one's daily home life—to say nothing of how important a part in army signaling in the field—the telephone of the future may become.

AN ENGINEERING FEAT ON LOOKOUT MOUNTAIN

TOURISTS, from President Roosevelt and Prince Henry to the humblest, include Lookout Mountain in their itinerary. It possesses historic interest, for here Hooker's famous "Battle Above the Clouds" was fought. Low in the northern slope of the mountain, not much above the level of the

river, is the entrance to a cave. Some years since a party explored this cave. They met the usual obstacles of the cave explorer, and after climbing and crawling, pulling themselves through small holes, squeezing themselves flat in tight places, wading and scrambling, they at last reached an immense vaulted chamber. A beautiful room it was, with stalagmites and stalactites to adorn it; but its striking feature was a stream, sparkling and cold, which dashed roaring from the roof, far above them. The scarcity of water on the mountain had always been remarkable. Indians had roamed the slope, warriors had scaled the heights, countrymen had lived out their lives there, summer residents had come and gone, sightseers had gazed, and wondered, and pursued their way, while here below them, all unsuspected, old Lookout had held his deep stores.

There was found no possible way of scaling the walls of the lofty room, to follow the stream to its source, and the party retraced their way. Then the active brain of one young man fathered a daring plan. Born under the shadow of the "Point," and grown to a manhood full of energy, he proposed to bring this deep-lying water and give it to drink to the people in Chattanooga. He was laughed to scorn. "Wild idea; utterly impracticable; visionary," met him on every side. His friends did not encourage him, and capital was hard to interest. With engineers he again sought the cave. It was not possible to measure the height of the fall. Original experiments with lighted balloons were invented, and its height estimated. This, then, was the perpendicular of a right-angled triangle; the way they had come, from the entrance to the cave, was its base; the rough, uneven slope of the mountain side was its hypotenuse. If they could find exactly the point at which the hypotenuse met the perpendicular (extended) they would reach the water. The chances of failure did not daunt Mr. Anderson. A shaft was sunk. Into solid limestone it went, daily a little deeper, until, at a depth of forty feet, it reached the spot where the mountain stream began its plunge into the cavern they had visited, three hundred feet below. It was found to be of greater volume than they had anticipated, flowing one and one-half million gallons in twenty-four hours.

Some plan for bringing the water to the surface must now be adopted. It was decided to tunnel in a straight line from the stream to the surface. This interesting tunnel is 200 feet long, six feet high, and from five to eight feet in width. Its walls, its floor,

its roof, are the everlasting rock of the mountain, and scarcely a break or a fissure mars them. The stream was turned into this tunnel, and now no longer thunders down into the lower cave. Once at the surface, only the ordinary problems of the water-works man were to be solved. A reservoir was built, and the water piped to Chattanooga, two miles away and three hundred feet below. And now it is also pumped to the top of the mountain.

A ONE-MAN SURVEY

THE United States Geodetic Survey, among many other things, has charge of the charting of the coast and river lines of the country. This branch of surveying is done usually by means of preliminary triangulation, followed by actual plotting in the field with plane-table and alidade.

On one of these survey parties a certain young college graduate from the South secured a position as temporary aid, taking the trip, which was along the shores of the Chop Tank River in Maryland, more for his health than anything else. He had some knowledge of surveying, and was able to be of enough assistance to his chief to be allowed to do much of the real work of the plotting, relieving in no inconsiderable degree the failing sight of the supposed surveyor. It thus happened that when the captain in charge of the party was taken ill and had to leave for home, Franklin was ordered to complete the remaining unfinished thirty miles of coast line as best he could.

Everything went well for the first twenty miles, and he was calculating on finishing up two days before his expected time, when his table man and one of his rodmen left him in the lurch, one from malaria and the other for reasons unknown. Nothing daunted, the young aid secured the services of two young negroes for rodmen, and although their stupidity retarded work a good deal, seven more miles were done when the remaining rodman, promoted to table man *vice* the deserter, sprained his wrist. Still not discouraged, Franklin continued work with his two colored helpers, until only the southwestern part of a small island near the mouth of the larger Chop Tank remained to be plotted.

Arriving there on the last morning of his time, he set up his table, and as soon as it was light enough, started his boys to work, doing the sight taking, measuring and plotting himself, besides signaling his own rodmen. This continued for half an hour, and he was about to move his table to a new station, when both

boys returned on the run, dropping their rods and informing their indignant employer that "dey's a house ovah dar wut's got de small-pox, Boss, and we uns cayn't do no more wuk hyer—no sah! Deed'n we cayn't!"

Threats and entreaties were alike useless. The negroes refused to move, and finally slouched down the beach to an old boat and paddled to the mainland.

His first thought was to give up, but remembering that only two miles remained to plot, he set about the unheard-of task of surveying it by himself!

Procuring the two discarded rods, he set them up in the sand at the proper points. Returning to his table, the rods were sighted, the distance measured and the angles plotted, after which another tramp was made, the rods replaced in new stations, his steps retraced to the table and the process repeated. It was very slow and very hard work, particularly discouraging, when, as happened once, both rods fell over in a sudden gust of breeze, just as the first sight was being taken. That, of course, meant another quarter-mile tramp and return. Every three-quarters of a mile, and sometimes oftener, the heavy table had to be moved and a return made to the base for the instruments and accessories.

It was nearly dark when the last line was drawn, and the stars were out when a very tired and hungry one-man surveying party got his traps to his launch. A ten-mile ride up the river to his farmhouse quarters remained, and he found that running a forty-foot gasoline launch and being engineer and pilot, too, was rather hard work.

It would be pleasant to chronicle a real reward for such pluck and stick-to-it-iveness, but the only meed of appreciation out of the ordinary which he received was a cordial letter from his chief, praising his effort and faithfulness, and carefully omitting mention of the fact that a week or two of delay in that particular chart would have made no vital difference.

AN ADVENTURE OF A NEWSPAPER MAN

NEWs of the blowing up and sinking of a steamboat on the Ohio River some distance from Pittsburg reached the office of a Pittsburg paper one evening some years ago. A supply of money was hastily thrust in a young reporter's hands—a reporter who has since risen to journalistic prominence—and he was instructed to get to the scene as rapidly as possible. A hurried trip to the station, without stop for anything, enabled him to leap on the first express

bound westward. Once on board, he was informed that the train did not make a stop, after Allegheny, until about sixty miles beyond his destination. A cautious hint from a Pullman porter apprised him of the presence of a division superintendent on the train, and in a few minutes he secured an order on the conductor to have the train stopped for him. Reaching the little station late at night, he asked the telegraph operator to remain until he returned. Walking several miles to secure his "story," he returned as quickly as possible, only to find that the operator had disregarded his request and had closed the office.

With time creeping into morning hours, and the prospect of his work going for naught unless he secured an operator to get the story to his office, he desperately tramped about the unlighted village, only to find that the man he wanted lived several miles distant. Unsympathizing country folk who vouched that information through closed doors could not be induced to exert themselves further.

The young fellow, thinking hard, walked back and forth on the railroad platform. Suddenly he noticed the sleeping form of a tramp huddled against the station. Disturbing the latter with a vigorous foot, he offered the prostrate man five dollars to make a hurried trip for the operator.

The man quickly got to his feet.

"Do you want an operator?" he asked.

"Certainly," with some emphasis.

"Well, I'm a 'bum,' but I was an operator.

If you can get into that station, I'll send your stuff, but I won't touch a door or a window myself."

Without talking further, the reporter found a cudgel, broke the window, clambered in and cleared all obstacles. The tramp made good his claim and the reporter's last difficulty was dissipated. The tramp clicked off the story, and the copy reached the office in time to go to press. The reporter told the story once—many years later—as an example of what "luck" will do for a man.

THE STORY OF A BOTANICAL COLLECTOR

FATE had placed me in the far Southwest, on a ranch, removed from town, and in a sparsely settled community. I had had only the ordinary high school training in an educational way, and as most of my life had been spent in the city, the usual avocations of the farmer's daughter—butter making or poultry raising—did not appeal to me.

I had always been fond of the study of botany in my school days, and I had made some very creditable collections at one time

and another. I began analyzing the flowers about me, and noting those which might be most adaptable to floriculture. Then, as the seasons came on, I made several sets of dried plants, carefully selected for study, and one hundred varieties in a set. In the meantime, from catalogues and from magazines, I had secured the addresses of leading seedsmen and florists. I wrote these people, and fully ten per cent. of them replied encouragingly with small orders for seeds. Many of them congratulated me on my new enterprise and promised larger orders for the future, and a half-dozen volunteered information about varieties desirable for the European market and best methods of gathering and saving. Two men sent me the addresses of other firms that would have patronage for me, and among them some large European dealers. Through the Academy of Science in the largest city of my State, I secured the addresses of leading curators in such institutions as the Arnold Arboretum at Harvard and like institutions East and West. I easily secured orders for herbarium specimens unmounted, and within a year I had a considerable business, conducted entirely by mail.

My correspondents were most of them college men, and the letters of instruction I received from notable botanists for whom I eventually made collections for study purposes were as good as a course of lectures at college for me. I never filled an order with an inferior specimen. I always carried out to the minutest detail all instructions. Very frequently I was detailed to make special field notes concerning trees and plants for busy men who could not leave their classes and home work. At the end of three years I calculated thus: Net gain: perfect health; a horse and buggy; a small house that served as the herbarium; a business which was equivalent to about eight hundred a year, with the best of prospects for increase; new and valuable friends; and much training in a delightful branch of natural science.

HOW A SMALL INDUSTRY HAS DEVELOPED

RAISING watermelons solely for their seed, to supply the Eastern seed firms, has become a profitable industry in Kansas. Most of the watermelon seeds used in the United States are now produced in the semi-arid region of this State. Melons are grown by hundreds of acres, on the same large scale that corn is raised, and are harvested and threshed after the manner of other crops. No account is taken of the fruit, which is treated as the chaff of the product.

Two years ago an Eastern seed firm sent a

representative to western Kansas to interest the farmers in the experiment of raising melons for the seed, with the guarantee of a market for their product; farmers were taken with the idea, and the venture has proved profitable to them and to the seed firms. From a small beginning the industry has grown until many farms are now devoted exclusively to watermelon raising. Some farmers in the dry portions of the State have abandoned even such a staple crop as corn, preferring to take chances with melons, which thrive in dry weather, while corn often fails for lack of rain. Land which in dry weather will not produce an average of a thousand pounds of corn to an acre will produce from thirty to fifty tons of melons to an acre, even under the most unfavorable conditions. The fact that melons can draw sustenance from dry soil makes them a desirable crop in the extreme western part of the State. Another important consideration is, that the cost of producing an acre of melons is but little more than the cost of producing an acre of corn, and the profits are from three to five times greater than could be realized from any other crop which would grow in that climate.

Home-made threshing machines, constructed especially to meet the requirements, are used for separating the seeds from the melons. At the bottom of a huge hopper is a cylinder armed with long, sharp spikes, which is run at high speed by horse power. The melons are thrown into the hopper, and the teeth of the cylinder quickly separate the seed-bearing pulp from the rinds. The hopper discharges into a great cylindrical screen, set on a slight angle, in which long arms revolve on an axis, constantly stirring the mass of pulp and pushing the seeds through the screen. By the time the mass reaches the waste pile all the seeds have been separated from the rinds. The seeds are stored in a vat with a portion of the pulp which comes through the screen. Water is turned in, and when fomentation begins the seeds float to the surface. They are skimmed off and dried, and are then ready for market.

MAKING AUTOMATIC MACHINES TO ORDER

ALITTLE New England factory makes, among other things, a useful kitchen utensil which is sold yearly by the hundreds of thousands. Small as the article is, it is somewhat complicated, and requires a large number of different "operations," to use the factory term, before the completed utensil is ready to be packed for the market. That is to say, the material went down line after line of laborious foot and hand presses to be cut

and punched and shaped and fitted. With an idea that many of these slow, costly and wearing processes might be done away with, one of the officers of the company talked one day with a concern near by who make automatic machinery. He showed them the article in the various stages of its development.

"Now, gentlemen," he said at last, "can you simplify, cheapen and quicken our productive power, and if so, what will it cost?"

The men figured for a few minutes.

"Yes," they said, "you can do practically all of the detail work with two machines, which will require only sliding on the belts and a fraction of one man's time to watch them. These machines will do as much in an hour and a half as a dozen workmen and presses are doing now in a day. They will cost you — and you can have them in two months. You can figure your own costs, and if the change is worth your while we'll go to work immediately."

In two months that part of the work was entirely changed; men were put at other tasks where they had long been needed, money was saved daily, and the output of this particular article has been larger and much more simply obtained, and people are buying the utensil more cheaply all over the world.

The concern that made these machines does nothing else but fill orders of this sort, and with other similar companies it is helping to conserve to New England by ingenuity the first place in American manufacture, while great factories are being built and run near the supply of raw material.

BUSINESS TRAINING FOR COLLEGE MEN.

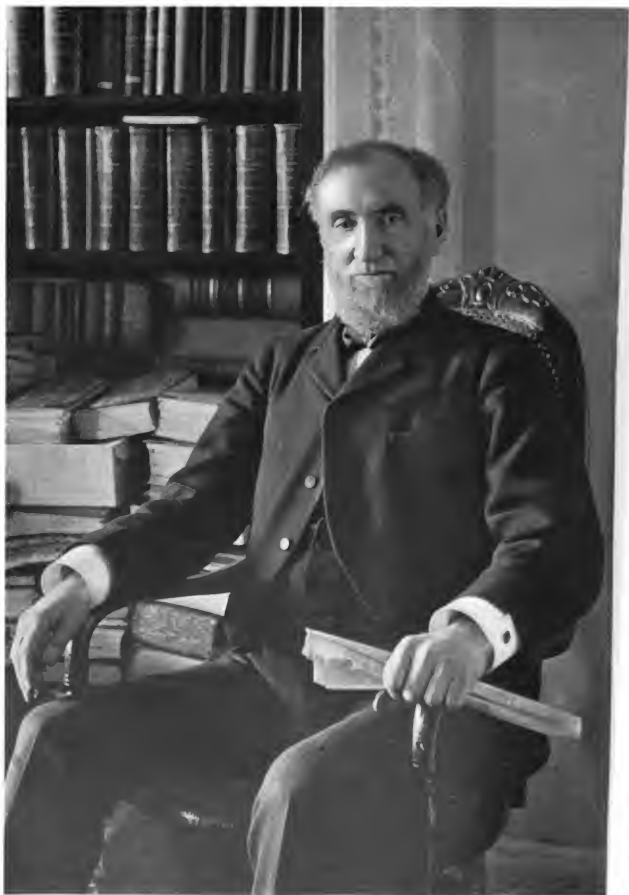
THE just graduated college man who has no further plans for the future than that he is "going into business," has considerable difficulty in finding an opportunity. The employer everywhere is looking for young men of education and ambition. Employment committees and bureaus of information at the colleges try to find places for their graduates, but the problem of bringing the two men together, the one wanting work, the other wanting men, has perhaps never been so practically solved as it was last summer by Mr. Gage E. Tarbell, of the Equitable Life Assurance Company. Mr. Tarbell had worked his way up from small beginnings; he had indeed written insurance to pay his way while he was studying law, and he was interested in the possibilities of young men who get started properly. As an officer of his company he saw, furthermore, that the colleges every year were turning out men who were potentially splendid agents for

insurance. The problem was to get them interested, to teach them the business and to set them to work.

Last spring, therefore, almost too late to get the best results, he wrote to a large number of colleges, telling them that he was planning to run a post graduate course in insurance during the summer; that he was ready to pay the boys' living expenses during the course, and that he would guarantee every fellow who took the course a living salary when the short study period was over. He invited their cooperation and he got it to a surprising degree.

On July 1st, when the classes began, 120 college graduates entered to learn the insurance business. All went to work immediately, the boys, dignified heads of departments, who told them in concise, business-like fashion the important things they needed to know, and Mr. Tarbell himself, who plunged with inspiring earnestness into this plan he had developed. A good share of his teaching was in practical demonstration of how to write insurance. He set the men at work in the city and held every day testimony meetings of their experiences. He had the different men in the class insure each other before the rest of the 120. And he did not forget that the boys needed recreation. He sent them to the theatre and out for other pleasant evenings. The result was that these college men had a busy and enjoyable month in which they learned the elements of practical insurance work from the men who could most directly and most quickly teach them. At the end of the course most of the men took two weeks' vacation, and were then assigned to definite territory at a guaranteed salary of \$75.00 a month and an opportunity to make much more in commissions. They were enthusiastic about their work and about the man who had given them their opportunity. And the reports of their achievements so far show that the experiment has succeeded beyond even Mr. Tarbell's hopes. Plans are now being made for next summer's session.

The importance of this successfully carried out plan is many sided. It not only gives a large number of educated young men free practical schooling in insurance, and then offers them a splendid business opportunity, but it may very possibly be the beginning of a generally accepted scheme by which college-bred men can quickly find their places in whatever business they care to choose, and by which, as well, employers can immediately reach and train well-equipped employees. It shows a new and higher appreciation of the value of college men in business, and is replacing old-time prejudice.



REPRESENTATIVE JOSEPH G. CANNON, OF ILLINOIS
WHO WILL PROBABLY BE SPEAKER OF THE HOUSE

Photographed by Clifford

THE WORLD'S WORK

JANUARY, 1903

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NUMBER 3

The March of Events

WE start the new year with the same group of domestic problems with which we started the old year. In our foreign relations and in the tasks presented by our island ward; we have made headway, to the steady upbuilding of our national character and of our influence in the world. The year just gone was noteworthy for the ending of wars, for the subsidence of national jealousies, and for the increasing prosperity and strength of the Republic. But our familiar home-problems are with us yet—the trusts, labor-unions, the tariff, the currency, municipal administration, and race feeling in politics.

These involve tasks that cannot be done by sheer energy, however well directed. Such problems are in fact symptoms of defects that yet exist in our national character. In a perfectly developed public opinion they would dissolve as fog dissolves in sunlight; and we move toward their solution as we move toward the building-up of the character and the intelligence of the people. They are important matters of economic, fiscal and political education.

There are many problems of a different and more difficult sort. Such were the tasks of the Civil War and of the Reconstruction period. Such were the tasks presented at first by the Philippine Islands. These were structural. In doing them we were making new experiments with republican govern-

ment itself. We were putting it to new tests. But even the trusts, and surely labor-unions and the tariff and the currency and city government, involve no such fundamental activities. Grave and stubborn as these are, they are problems rather of regulation, of administration, of social growth, of education. For the solution of them we need long tuition. We shall bungle through many experiments; we shall have many a year of discussion. There is, in fact, no such thing as a solution of them. We shall simply grow toward their settlement; and as we grow they will naturally and gradually eliminate themselves.

SOCIAL, NOT STRUCTURAL, TASKS

AS the public mind releases itself from holiday recreations and again takes on a thoughtful mood, we may fairly claim that we have at least learned more than we knew a year ago about some of these familiar political and fiscal ailments.

About trusts, for instance, there is less vague discussion. Thanks chiefly to the energy of the President and to the clear thinking of the Attorney General, public attention is now concentrating itself on a definite plan of experiment at wholesome regulation. The Federal Government will try, if not at the hands of this Congress then at the hands of some subsequent one, to hold them to responsibility and to some degree

of publicity. This may be done—at least, an effort may be made to do it—by the Federal Government's power to regulate interstate commerce. We may try to make an ineffectual trust-regulating law effective. It is a great gain to get so definite a plan instead of the vague discussion of a year ago. But even with a clear plan there is a stubborn and perhaps an ineffectual struggle ahead.

It may even be said that we have made at least a negative kind of progress with the social problem of organized labor. Some of the unions have tried the public patience too far by ill-advised boycotts and by an unpatriotic attitude toward the militia, and there has been a reaction of public opinion against them. The kindly and indulgent and the generally sympathetic attitude of a large part of the public has given place to a critical mood. The harm that ill-led unions may do themselves has again become obvious; and such a public attitude is the first step toward a return to conservative leadership.

And so with the rest. We slowly educate ourselves by experiment, by mistakes, by discussion, by collision, and by more discussion. We are safe so long as there are unmistakable signs of social growth. And the main matter of clear thinking about all these problems is to know that we shall get rid of them only by outgrowing them. Statutes may help, good theories may be useful, constant effort is indispensable. But all these fall short except as they help toward a better-developed public opinion.

THE SAVING OF INDIVIDUAL OPPORTUNITY

IN all our thought of trusts and labor and such things we shall avoid confusion and be the more likely to steer our thinking true if we keep a firm hold on the one great aim of our social structure. The very corner-stone of a democracy is the preservation of individual opportunity. It is for the best growth of the individual that our whole system of society and of government was wrought out and fought for. This is fundamental. Without this we fail. Old World societies and systems have nurtured classes. It is the peculiar distinction and the everlasting glory of a democracy—the sole hope, in fact, of any continuous advancement of human society—that every man shall have, so far as society can give it to him, a free opportunity for his own development. If we keep

this fundamental fact in mind many tangled problems will become straight in our thinking.

It is as true this new year as it was in the year when men first dreamed of a democratic society that the saving fact of it is that there shall be no fixed class. The worst of these domestic problems that are always with us turn on this pivotal truth. If any tendency appear that looks toward permanent class-distinctions and toward making men fast in certain classes, forthwith we have a social problem; whether it come in the form of trusts, or of a tariff, or of labor-unions, or whatever form it take. The mobility of our society is its salvation. It is from this point of view that we are likely to get the most helpful conception of our uneven development and of our social and public duties.

AN IMPORTANT LAW OF SOCIAL GROWTH

AN important and interesting social law is illustrated by the growth of the postal service. The business of the department has responded wonderfully to every increase of postal facilities. For instance, when free city delivery was established in 1857 the receipts were \$8,000,000. A little more than ten years later they reached \$20,000,000. There has been a similar increase because of the establishment of rural free delivery. "The experience of the Department," says the Postmaster General, "in counties where the service has been fully established for a period of two years, justifies the belief that the revenues in the rural districts will increase fivefold." He incidentally shows another interesting result of the rural delivery system:

"It was claimed that rural delivery would increase the value of farm lands. Official reports indicate that in communities served by rural free delivery isolated farms have been enhanced in value because of that service at an average rate of at least 5 per cent. in the older settled States; and in the more remote States and Territories, where postal facilities have heretofore been few and far between, the increase of value has been much greater."

The incalculable value of these extensions of the postal service—the increase in the worth of property and the even greater stimulus to the social and commercial activity of the people—emphasizes this great social law: the masses seldom see beforehand the value of new forces for their development, but they eagerly profit by them when they are set going. To wait till the people demand



THE LATE HERR FRIEDRICH ALFRED KRUPP
THE GREAT GERMAN IRON-MASTER



THE LATE EX-SPEAKER THOMAS BRACKETT REED

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an improvement of service or of conditions is to hold social progress back. Real statesmanship or wise leadership foresees that every facility for advancement will be welcomed and will be used. The growth of periodical literature has proved this. Cheap railway fares have proved it. The extension of library service has proved it. This broad and practically universal law has been proved by every facility for social improvement that the people of a democracy have profited by. The cheapening of every public service enormously increases its utilization.

Moral: a parcels post—that is, cheaper postage on merchandise and the admission to the mails of heavier packages than four pounds—would pay. It would pay in money because of the increase in business, and it would pay enormously in convenience; for it would make life easier by that much.

Another moral: a great reduction in telegraph tolls would pay—pay in the same fashion; and one of the crimes of our time is the successful prevention of such an increase in telegraphic convenience as we yet suffer. It costs twenty-five cents to send a ten-word telegram from one town to the next, but a letter can be sent to inland Alaska and drawn hundreds of miles on a dog-sled for two cents.

The people are slow to foresee and to demand new conveniences, but they eagerly use every convenience for their general social advancement when it is provided.

THE DEBAUCHING AFTER-COST OF OUR WARS

IF there were no other reasons why peace at any honorable cost is desirable to a democratic government, there is reason enough in the long after-cost of war. We have paid more than two and three-quarter billions of dollars (if anybody can comprehend such a sum) in pensions on account of the Civil War, and the expenditure goes on at the rate of one hundred and forty-four millions a year. But the cost of pensions is not the worst fact. The worst fact is the demoralization of a large part of the public. All these years systematic and organized fraud has been practised in the name of patriotism, and thousands of men and families have come to regard the Government simply as a dispenser of incomes. The administration of the pension bureau now prevents all the palpable frauds that it can, but under the loose laws that exist there is no way to sup-

press the activity of the pension attorneys, who continue to debauch the character of veterans and the kinsmen of veterans. There are even at this late day about a million names on the pension roll.

The pension after-cost to July 1, 1902, of each of our wars was:

War of the Revolution.....	\$70,000,000
War of 1812.....	45,025,297
Indian wars.....	5,814,206
Mexican War.....	31,861,337
War with Spain.....	3,275,184
Civil War.....	2,728,878,276

How large a part of this sum has gone to the degradation of character and how large a part to veterans whose pensions are properly badges of honor no man will ever know. All that we know is that the granting of pensions has revealed the weakest place in our system of government. No political party has shown itself strong enough to withstand the threats and the criticisms of the "old soldier" vote, nor has the private virtue of vast multitudes of men and women withstood the organized seduction of pension attorneys.

We have very nearly got rid of the scandal of the spoils system, to which the demoralization that followed the Civil War gave a strong impulse; but we shall yet have to endure the twin-scandal of pensions till by the sheer lapse of time most of the children and the wives and the connections of the soldiers of forty years ago are dead. In the meantime we shall for a considerable period continue to disburse about one hundred and fifty millions a year, much of it to the degradation of citizenship and manhood. The shame of it is not that so much money is wrongly spent by the Government (though this were shame enough), but that it is so spent as to encourage a debasing conception of the function of government.

OUR RAPIDLY INCREASING SEA POWER

THE fighting strength of the navy, when the vessels that are building and those authorized by Congress have been finished, will be four times as great as it was during the war with Spain. We then had armored cruisers, but only four first-class battle-ships—the *Iowa*, the *Indiana*, the *Massachusetts* and the *Oregon*—and one second-class battle-ship, the *Texas*. We have built or authorized the addition of fifteen more first-class battle-ships—the *Kentucky*, the *Kearsarge*, the *Alabama*, the *Wisconsin*, the *Illinois*, the



MISS JANE ADDAMS

FOUNDER AND HEAD OF HULL HOUSE, CHICAGO

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Maine, the *Georgia*, the *Pennsylvania*, the *Rhode Island*, the *Ohio*, the *Virginia*, the *Missouri*, the *New Jersey*, the *Louisiana*, and the *Connecticut*—and two armored cruisers, the *Tennessee* and the *Washington*. The *Louisiana* (which will cost nearly four millions) and the *Connecticut* will be better ships than the navy has ever had. The Secretary of the Navy recommends "a continuance without interruption of the increase of ships"—at least two more battle-ships in addition to cruisers.

"The country approves," Secretary Moody says, "with hardly a dissenting voice, of the policy of strengthening our power upon the sea," since we now have large interests in the Pacific as well as in the Atlantic, to both of which the cutting of the canal will add. Dissent to this policy is heard, but it is ineffectual; and we seem sure to continue to increase the navy till we become at last—a long time hence—a great naval power, second, perhaps, only to England, which now has forty-seven first-class battle-ships. Germany has thirteen, France twenty-four, and Russia twenty-two.

But we already lack officers for the ships that we have. The present navy requires 1,600 officers, and we have only about 1,000; and four years hence (in spite of the cadets that will be graduated at Annapolis in the meantime) we shall require at least 1,300 more than we shall have. The wish of the service is that the number of cadets be greatly increased.

The navy offers a career that is attractive to a large number of youth of the best qualities, and graduates of the Academy are practically and properly the only men who now become officers. They constitute a body that any country may be very proud of—these alert and capable specimens of the best American manhood and patriotism; and there will never be an insufficiency of them if the number of youth admitted to the Academy is large enough.

There are now less than 22,000 enlisted men in the navy, nine-tenths of whom are citizens of the United States (all who enlist must now become so), and more than three-fourths are native Americans.

The conclusion of Secretary Moody's report is a graceful paragraph about Admiral Dewey:

"I cannot close this report without acknowledging the sympathy, coöperation and aid which I have

received from the Admiral of the Navy. As President of the General Board of the Navy his services have been of great value to the department and the fleet. The security of his own fame has not lessened his interest in the service or diminished his effort for its improvement. His zealous earnestness in the cause is the good fortune of the department, and gives him an added title to the favor of the nation."

HOW THE PRESIDENT HAS STAKED HIS FORTUNES

REFERRING again to the effort to regulate trusts—and the public mind will not get away from it for some time to come—the political aspects of the situation are interesting, even if the immediate outlook be not hopeful. The Republican party in a general way has been the friend of trusts and other vested interests. The tendency has been for them to feel reasonably safe from objectionable interference under Republican administrations. But Mr. Roosevelt has, in a way, staked his political fortunes on calling them to account—has, in a sense, stolen the Democratic position. He would do in a conservative way what many Democrats would do radically.

Now, the Republican leaders may do any one of these things:

They may follow the President's wishes and suggestions with earnestness and try to bring the great corporations practically under the National government's supervision. But this course seems unlikely at this session of Congress. Perhaps it is unlikely at any time.

They may frankly do nothing and thus try to force Mr. Roosevelt to give up his party programme. This effort is probable—its success very improbable.

They may feign earnestness about the matter and thus try to get credit for an effort, but still do nothing. This course is the most probable of all.

If the Republican leaders do nothing the next year and a half to carry out the President's programme, he or they will have to surrender. If they find his personal popularity too great for them, they will make a virtue of necessity and be his ostentatious friends, and the party may show under his leadership a renewal of vigor. This is the party's best chance for an indefinite continuation of power. But it is not likely to take this course willingly.

If the President finds his party in Congress unwilling to follow him, he may appeal successfully to the country; or the Democrats may persuade the country that nothing can be hoped for from a Republican Congress.

Thus we have a most interesting set of forces at play—

The President is in earnest about calling the trusts to responsibility.

The Republican leaders are not in earnest about it.

The Democrats would like to do it, but they lack initiative and leadership.

But a large part of the people are in earnest about it; and whenever hard times come they are likely to become still more in earnest unless some positive action be taken in the meantime.

With all these forces, there are chances for many interesting things to happen. The most probable event will be an unwilling concession of leadership to the President because of his personal popularity. Then the task will be his to put his programme into execution—against enormous pressure. He will have created an unparalleled opportunity.

THE PRESIDENT'S SUMMARY OF OUR "COLONIAL" ACHIEVEMENTS

WHEN one recalls all the grave trouble and loss both of life and treasure and the great political difficulties that we have been through these four years of our "colonial" responsibility, these sentences are the most gratifying utterance in the President's Message to Congress, and they tell a story that we may well be proud of:

"Of Porto Rico it is only necessary to say that the prosperity of the island and the wisdom with which it has been governed have been such as to make it serve as an example of all that is best in insular administration.

"On July 4th last, on the 126th anniversary of the Declaration of Independence, peace and amnesty were promulgated in the Philippine Islands. Some trouble has since from time to time threatened with the Mohammedan Moros, but with the late insurrectionary Filipinos the war has entirely ceased. Civil government has now been introduced. Not only does each Filipino enjoy such rights to life, liberty and the pursuit of happiness as he has never before known during the recorded history of the islands, but the people taken as a whole now enjoy a measure of self-government greater than that granted to any other Orientals by any foreign power, and greater than that enjoyed by any other Orientals under their own governments, save the Japanese alone."

TWO PACIFIC CABLE SYSTEMS

THE last link of the British Pacific cable was laid a few months ago and within a few months the American Pacific cable will be finished. A man in London may now send a message around the world to himself both westward and eastward, and each may circle the globe by British wires and be

delivered in thirty minutes. The American Pacific cable will touch only American landings till it reaches China; for its intermediate stations will be Honolulu, Guam and Manila. Although it is the private enterprise of the Pacific Cable Company, our Government has a guarantee of priority of service for its own messages, and of reasonable tolls for the public and the right in time of war to assume control of it. It has even the right at any time that Congress may so direct to purchase the cable at a price set by a board of appraisal. Thus our Government has secured Pacific cable facilities without the expenditure of public money.

The new epoch in commerce and politics that was begun when the Atlantic cable was laid will have no parallel; but a second stage in that same wonderful change begins with these Pacific cables. They will unite the Orient and the Western world as these could not be drawn together in any other way. The tolls from China and Australia westward to the United States have been practically prohibitory of private use. They will now gradually become cheap enough to have a quick influence on trade.

A PROGRAMME FOR SELECTING PUBLIC OFFICERS

A GOOD working theory for the selection of candidates for important offices may be constructed from the truthful remarks of District Attorney Jerome of New York and of Circuit Attorney Folk of St. Louis. Mr. Jerome, who is not afraid of those tasks which none of his recent predecessors dreamed of undertaking, said just after his election, quoting a wise public man of a generation ago:

"The only kind of man to fill a public office is the man who does not want the office and does not wish to be reelected."

Mr. Folk, who has sent to the penitentiary for giving or taking bribes some of the very men who nominated him, recently declared:

"I told the men who nominated me that I didn't want the office. I don't think that I could be elected for another term."

THE OUTLOOK FOR PERMANENTLY DECENT GOVERNMENT IN NEW YORK CITY

A YEAR of the Reform Administration of New York City under Mayor Low has passed and half his term of office is gone. In November, 1900, Mr. Low defeated Mr. Shepard, the Democratic candidate, by 31,500

votes. In November, 1902, Mr. Coler, the Democratic candidate for Governor, and a far less attractive personality than Mr. Shepard, received 122,000 more votes in New York City than Mr. Odell, the Republican candidate. The politicians and the friends of non-partisan municipal government have, therefore, naturally been taking stock of the political assets and opportunities of Mr. Low's Administration. What has the Administration done, and what is the outlook for permanently decent government of the metropolis?

This single year of Mr. Low's mayoralty has brought great gains—very much greater than the superficial observer is likely to know. In the first place, the *personnel* of the city government—at least, of most of its important departments—is dignified and well-bred. Dignity and good-breeding are not government, but they are very important qualities of good officials. The city has had in its chief executive office a man of whose personal character and civic qualities it may be proud, a representative of its best citizenship. And he has no entangling obligations. This is much.

In the next place, those great departments of the city government which are practically scientific offices, and which clean the city and look after its sanitary welfare, have done their work well. Some of them have done it better than it was ever done before. And this is what was to be expected. Politics have been eliminated from these departments. They are under the direction of competent men; they are well conducted, and the city and the whole country have gained much by their demonstration of the practicability of attacking these difficult problems of city life scientifically. And surely this is a great deal. Even in so short a time as one year some remarkable changes have been wrought—enough to convince anybody that the work of cleaning the streets, of doing sanitary inspection, of caring for the health of the city and all such functions ought never to be at the mercy of politicians. The heads of these great departments ought to serve during good behavior and competent work.

Yet this is not all that the year has revealed. While it has shown these enormous gains, it has shown also certain unfortunate weaknesses of the Reform Administration. In the more directly political parts of his work Mayor Low has been hindered by the holding-

over of incompetent officials and by the low character of other departments than the executive. In these directions he has not had a fair field nor sufficient time to work a revolution by slow methods. Every fair-minded man will remember these facts before he pronounces judgment.

But it cannot be forgotten that a year ago the police work in New York was a world-wide scandal. There was organized vice, for there was organized protection of vice. It was the most diabolical condition that existed anywhere in Anglo-Saxon Christendom. The worst of it was, not that vice and all manner of uncleanness flourished, but that large masses of the American people came to regard municipal government (and hence all government) as a power in league with vice—as a thing necessarily and always corrupt. It was as low a plane of political life as any American community has ever touched. And it was the moral indignation that this state of things provoked which made Mr. Low's election possible. It was this degrading condition that he was elected to change.

To change it meant a revolution; and to work such a revolution some quick, energetic and even dramatic method was necessary. This is not a task like the others. It is a task in which millions of people are directly involved, and they must be convinced that a change has come. They must see that the old order of things has passed forever. Such a change can hardly be wrought gradually, for if it is not wrought quickly the old forces of evil easily renew their activity. Half the battle is an early demonstration of earnestness.

Mr. Low is a good type of the reformer. But he is not a revolutionist; and a revolutionist is what is called for.

It is the old trouble of most efforts at reform politics. The reformers are too gentle; they rely too much on moral suasion; they shrink from the rougher work of dealing energetically with men; they are too likely to assume that good intentions and good moral principles win by mere formulation. They talk, but they are too slow to fight. They shrink from rough action for fear of criticism.

The grave danger, therefore, is that the Reform Administration in New York City will be followed by a Tammany Administration, and that much of the most excellent work done under Mayor Low will be undone and have to be done over again. But there are

yet ten months; and in ten months even a New York police force could be remade and the city and the country and the world made to confess that the metropolis had a police army above suspicion. It is a Napoleonic task, and it requires Napoleonic qualities—certainly a Napoleonic vigor of action. The conservative temper is the best temper to bring to all the ordinary affairs of life; but there are occasions in war and in politics when nothing but dash, akin to recklessness, wins.

THE UNDOING OF DELAWARE

WHEN a witness from Delaware in the impeachment trial of Andrew Johnson said to the United States Senate, without the faintest trace of humor, "The eyes of Delaware are upon you," a ripple of laughter ran over the country. The conditions are now reversed, and the eyes of all good men are turned on Delaware; but nobody laughs. After having long been unrepresented in the United States Senate, that State is about to try again to elect two Senators. The question is not whether Delaware shall be represented by Republicans or by Democrats, but whether the long-vacant seats shall be filled by a man whose sole claim to political distinction is his wealth and by an associate of his choosing, or by two men who represent the majority as expressed at the recent election.

The history of the contest for the senatorship in Delaware is a shameful thing. Fourteen years ago, when, for the first time since the Civil War, Delaware had a Republican majority in the Legislature, a brazen stranger, who had recently by accident, it is said, acquired a technical residence in the State, presented himself at the capital declaring his willingness to aid the Republicans with money, and to accept as compensation a seat in the United States Senate. J. Edward Addicks, whose effrontery then astonished all who met him, was not elected, but by his large contributions to the campaign fund he became a perpetual candidate. And then began a most "liberal" use of money in politics. There was money for the leaders of counties and of "hundreds"; there was money for newspapers; there was money to pay off mortgages of farmers; there was money to aid embarrassed business men; there was money for local politicians who chose to speculate in Addicks' gas stock; above all,

on election day there was money for voters, black and white, such as the Delaware electorate never before had known.

Two successive Legislatures had Republican majorities, but in each there were enough anti-Addicks Republicans to prevent this adventurer's election. Addicks, in turn, held his men together to prevent the election of anybody else, so that for a time Delaware had but one Senator, and at length none at all. Then Addicks, angered at the resistance, declared that he or nobody should be Senator. The more frank of his supporters said, "He has paid for it and ought to have it." Undismayed by defeat, Addicks in the last political campaign put forth greater efforts than ever. The members of the new Legislature, together with a few Senators that hold over, make a majority nominally Republican, but not a majority favorable to Addicks.

Mr. Addicks is quoted as saying that he has expended thus far only \$250,000. How much more he will spend nobody can guess; but he has discovered, he hopes, a money-saving device in the use of Federal patronage. Although the Republican National Convention of 1896 heard Mr. Addicks denounced as a "moral idiot," the Convention of 1900 recognized him as the Republican leader in Delaware, and he is now claiming control of Federal patronage in the State, with the hope that the countenance of the Administration at Washington may coerce the so-called "regular" Republicans of the Legislature to support him and such an associate as he may designate. Such aid as this every friend of the National Administration expects to see withheld from him. The recent unfortunate reappointment of Mr. Byrne, an Addicks Republican, as the United States District Attorney in Delaware, was made by the President for purely personal reasons. If the country has reluctantly accepted that explanation it would not accept the recognition of Addicks without grievous disappointment.

This era of political debauchery has had its effect also on Democratic politics in Delaware. The little State is a sad example of the baleful effects of the persistent ambition of a single unworthy man to reduce it by the use of money to his political control. It were better to remain unrepresented in the United States Senate for an indefinite time

than to yield to him. It is an anomalous and shameful situation that hardly has a parallel in our political history.

DEEP WATERS OF THE RACE PROBLEM

PRESIDENT ROOSEVELT has again got himself into the deep waters of the race conflict in the South. The proposal to appoint a colored man, who is said to be personally capable and thoroughly fit, as Collector of the Port of Charleston, South Carolina, raised two questions.

The first question is, whether in making Federal appointments a man should be excluded simply because he is a colored man. White public sentiment in the South almost unanimously declares that a man's black skin should debar him, that such an elevation of a Negro disturbs the whole social and political status of Southern society, that it encourages "Negro supremacy," and that it gives the support of the Federal Government to a principle that Southern society will never admit. Very determined is the Southern whites' opinion on this subject.

Equally frank and clear is the President's attitude—that he cannot and will not make a distinction between men on account of their race or color. Assuming individual fitness, a colored man stands in the same relation to American citizenship and to the Federal Government as a white man. There is even an incidental theoretical difference, if there be a difference at all, in favor of the colored man; for the recognition of the ability and the character of worthy colored men is the more necessary for the encouragement of colored youth to develop character.

When the matter is once brought to argument the President clearly has the humane and fair side of this contention.

But the other question raised is a question of expediency rather than of principle. If a man is for any reason objectionable to practically all the persons who have to deal with him as a public officer, ought he to be made a public officer? Ought not the appointing power to have due regard for the public sentiment of the community? Is the main matter in making a political appointment the acceptable service of the community or the insistence on a humane and fair principle in regard to race relations? Or, for that matter, are the race relations made better by such an insistence, or may they rather not be made worse?

The Negro is now practically disfranchised in the South and made as unwelcome in several States in the councils of one political party as of the other. From his point of view what is the outlook? If the Federal Administration were to follow the Southern political example and were to yield to the Southern white feeling, such an attitude would mean that the Negro, however capable and personally worthy, cannot hope for political recognition from any quarter until by the general development of the race and the slow work of time a humaner and more tolerant public opinion prevails among the Southern whites. No National Administration, certainly no Republican Administration, can take such a position.

There is no more pathetic figure in modern life than the educated and capable Negro of high character. He has the white man's civilization, and he has the white man's responsibilities as a citizen; but he may not, in the dominant Southern opinion, indulge in the white man's aspirations nor open doors of opportunity that to the white man are flung wide. The National Government is his only political hope.

THE CURE FOR LABOR TROUBLES

THE ease with which industrial disputes can now be peacefully adjusted received its annual emphasis at the conference of the Civic Federation early in December. True, nothing was finally proved, but the mere concentration of a roomful of representative capitalists and labor-union leaders on the varying phases of a single problem was bound to afford illumination. It became clear, for example, that the unions are committed to a demand for the eight-hour day. Restriction of output was talked of. But it took a meeting of this sort to set forth the practicability of a union's foregoing restriction in exchange for the eight-hour day. Mr. Marcus M. Marks, President of the National Association of Clothing Manufacturers, told of a case in which the exchange had been made. Compulsory arbitration was frowned upon by every one. Incorporation of unions could get no serious consideration; it remains, as it has always been, an academic theory. Unanimously the members of the conference—none more strenuously than Mr. Gompers of the American Federation of Labor—deprecated strikes; and at the last

meeting of the conference the consensus of opinion became crystallized on the panacea for labor troubles. In cases of industrial disagreement, it was felt, both sides should discuss the points at issue in face-to-face sittings, then come to a decision either by mutual consent or by arbitration, and then make agreements binding the parties for a definite period. Concrete examples were given by actual parties to such agreements to show their complete success.

If industrial difficulties are ever to be solved by diplomacy rather than by war, the result will come only through such frank discussion as marked this conference. The value of such conferences, however, lies in the rapid-fire of questions and answers—as in the tilt between Archbishop Ireland and President Gompers regarding non-union men—and not in academic papers. If future conferences are to have their greatest value—and their value is great—there should be more cross-examination and fewer lectures.

HUMANE CONDITIONS OF EMPLOYMENT

PRESIDENT ELIOT of Harvard University pointed out with instructive clearness, in a recent address delivered in Cambridge, Massachusetts, five prime conditions of humane employment; and they make a trustworthy chart to sail by in our thinking over this whole sea of troubles. These conditions are:

- (1) A rising wage for efficient work.
- (2) Steady employment after adequate probation.
- (3) Encouragement for the making of a permanent home.
- (4) The opportunity to serve generously and proudly the interest with which the laborer is connected; and
- (5) A pension on disability.

Mr. Eliot declared that all these conditions of humane employment have been realized in Harvard University. A college professor is a hired man—hired generally under exceptionally satisfactory conditions. Yet it may be said in parenthesis that these very conditions present a somewhat notorious difficulty—the difficulty of getting rid of incompetent men in college faculties. It is a difficulty, however, that is not peculiar to this kind of employment; and it can always be overcome by vigorous and frank administration.

As a system—so to call it—Mr. Eliot's outline is as nearly ideal as any system that has been reduced to practice. He is, as the long-

time president of our largest university, an experienced employer of skilled labor; and this system has been wrought out under his administration.

"These five conditions of humane employment," he says, "I believe to be not theoretical or fanciful, but perfectly capable of realization. I venture to say that ten years ago no large American industry recognized these principles throughout its service. That is, no large American industry recognized all of them, or even a majority of them, and yet all these humane conditions of employment are founded on perfectly well known and moral qualities, physical habits, normal desires of mankind. Today the large services in which these principles are adopted are few in number in our country."

Most of these conditions, it will be observed, are not directly encouraged by most labor-unions. That is to say, the organization and the methods of most unions do not, as a rule, encourage indefinitely continuous service. So long as a man may be commanded to quit his job because of a wrong done by an employer of whom he never heard to an employee of whom he never heard, there is small chance of such permanent employment, or expectation of it, as underlies these humane conditions.

There is needed, therefore, such a modification of labor-unions as will enable employers and employees to establish permanent personal relations. Social reformers who have the ability to manage men and to shape organizations and institutions may find a large field of usefulness in the guidance of unions. Many of them are now chiefly fighting organizations. But this is only the first step in their development. What is the next step and the next? Here is a chance for constructive work of a very high kind, for leadership that may rise to the level of statesmanship.

RAILROAD PROSPERITY AND A \$43,000,000 INCREASE IN WAGES.

WITHIN a few months the wages of railway employees have been increased about ten per cent. on roads that comprise about three-fourths of the mileage of the country. Almost every important system has voluntarily increased the pay of its men except those who receive large salaries. Some made the increase by a single order, as the Pennsylvania system did; others by a more

gradual method, taking one department after another. This increase of wages is equivalent to about one and three-quarter per cent. of the net earnings of the roads. It will cost the Pennsylvania system, for example, nearly \$4,000,000 a year; the New York Central nearly \$3,000,000; the Burlington, the Atchison and the Southern Pacific each more than \$2,000,000; and it is a total addition of about \$43,000,000 a year to wages.

This increase was made, not in answer to definite demands of the employees, but as a far-sighted and just method of fair-dealing and of forestalling discontent. Railroad employees are, as a rule, among the best paid men in the ranks of labor. They have the advantage, too, of permanent employment; and on a few roads there is a pension system. The railroads, in fact, come nearer to carrying out the conditions of humane employment laid down by President Eliot than any other employers of large numbers of men.

The railroad companies use this increase of wages as an occasion to increase rates. Thus the public will pay the increase—properly enough, provided the rates are not increased unduly; for that they shall remain as low as possible is a prime condition of prosperity and progress. But the only way in which men who work for wages or salaries can share in the general prosperity is by an increase of wages or salary; for the cost of living is increasing rather than diminishing. Farmers, merchants, manufacturers—all other classes except wage earners—earn more by an increase of business even when the price of what they sell does not rise. Not so with men on salaries.

But the great railroads have been prosperous enough to raise wages to some extent at least, even without increasing their rates appreciably. Their gross earnings were \$540,000,000 more in 1902 than in 1892; their net income was \$113,000,000 more; and they paid \$48,000,000 more in dividends. It is noteworthy that this ten per cent. increase in wages is almost as great as the increase in dividends paid in 1902 over those paid in 1892.

In general it may be said that at no preceding time in our history have our great railroad systems been in so good a condition or have made so good a showing as now, nor has their great army of employees fared so well. This is much to say when it is remembered how enormous these great interests are,

how large the army of railroad employees is, and how intimately the service touches every part of the population. There were, for instance, 607,000,000 passengers carried by railroads in 1902—which means that, on an average, every man, woman and child rode about eight times during the year.

ECONOMIC SERMONS FROM THE PULPIT

BISHOP LAWRENCE, of the Episcopal diocese of eastern Massachusetts, wearied perhaps by the frequent and sometimes unfortunate use of the coal strike in sermons, maintained in a recent article that the preacher as a citizen has the right, and it may be his duty, to talk about current events; but that in the pulpit it is his duty to preach the gospel. Yes, and the pulpit would gain much if there were fewer sermons on economic tendencies and social and political events; for the gospel has these advantages over such subjects—it is easier to preach, it is easier to listen to, it is safer to expound; and it is more edifying.

Yet throughout the history of Christianity many of the greatest preachers have preached about current subjects. They have fulminated against thrones; they have rebuked social crimes; they have denounced entrenched wrong. But there is a difference. A great preacher may do what a little preacher cannot do; and most of the contemporaneous preaching on "current events," especially on political and economic subjects, has the sound of the amateur even when it has not the sound of the sentimentalist. The safest rule for all preachers, except those who know that they are great, is to stick to the gospel. Even platitudes are preferable to economic theories that are not sound and to political discourses that are transcendental.

THE HUMAN ATOMS OF A STEEL-BUILT CITY

FEW things in this wonder-age in which we live are more astonishing than the passenger traffic in New York City. When the elevated railroads were built in Manhattan and in Brooklyn the prediction of many sensible men was that the street-car travel would suffer greatly. But the street-car travel increased and has kept on increasing to a point of unbearable discomfort in the busiest hours. The increase has been at so rapid a rate that a man who only read the statistics would never guess that any other

means of travel was needed. Yet the elevated trains also during the busy hours are always so crowded as to provoke wonder both at the number of passengers and at the willingness of thousands of men and women to stand in packed cars (packed as sardines are), and to go and come swinging to straps. One wonders at this till one sees the still greater rush and crush at the Brooklyn Bridge. There is no other such spectacle under the wide heavens—men and women struggling not for seats but for standing-room. They literally push and are pushed, more densely crowded than cattle on cattle-boats, to and from their daily work. The wonder grows why civilized human beings will submit to such an experience twice every working day.

Well, street cars, ferries, sidewalks, cabs, elevated roads, and the Bridge—all these do not accommodate the throng. New bridges are building, and they, too, will be as crowded as the old one almost as soon as they are open. The great underground subway now under rapid construction will become the greatest thoroughfare on the globe. Yet it is already obvious that all the other means of travel will then be as crowded as they now are; for the Interborough Railroad Company, which will operate the subway, has made a perpetual lease of the elevated roads in Manhattan, guaranteeing to pay a seven per cent. dividend on their stock. The elevated roads in Manhattan alone carry nearly 200,000,000 passengers a year!

This urban travel gives a hint of the development of the great office buildings downtown and of the apartment houses uptown—of the working and living in high structures, of urban growth upward. The steel building and electricity as a motive power are fast changing the character and the habits of the swarming millions in New York. The rapid transition from the old kind of city to the new gives the social philosopher such a field of study as was never before presented—at least, the social philosopher who is not a part of it; for not the least remarkable thing about this change is the apparent unconsciousness of it on the part of the people who are pushed and jammed and shot up and down and who live and work in such an intimate compression of population as Chinamen never dreamed of—many of them, alas! at the same time in such isolation as no country folk except shepherds ever knew.

THE SMOTHERED DWELLERS IN "FLATS"

THE man died in New York the other day—a Mr. Kilpatrick—who is said to have built the first "flat," or apartment house. The necessity that families should live one above another was inherent in the growth of the modern city, and it is not just to hold any individual responsible for such a degradation of urban humanity. It was bound to come; and, if one man had not had the ignominious distinction of first building such a dwelling, another man would have had it. But it was an evil era that was then begun.

For, although it has been only fifty years since the "flat" began to dwarf the dwellers in cities, it has already so distorted the character of thousands of families that they consider apartment life normal. There are men who have so far fallen from nature as to put gas-lights in country houses; and nothing but death in childhood is so pathetic as this revelation of the abnormal. Now a certain proportion of unfortunate mankind will perhaps always have to live in sunless cells out of sight of all things that grow; but as long as living under such conditions is frankly regarded as a misfortune of poverty—as life in the slums—all is not lost. Tenement dwellers may keep some memory of green fields and dream of the joy of stepping on the unpaved ground; there is still hope of normal life for them. But, when men and women pay large sums of money for fashionable "apartments" and by choice live under conditions that dry up the sap of individuality, a hopeless social condition follows. Such persons regard the country as a thing that they have discarded except for condescending summer uses. Caged life has become the natural life to them, and they have forgotten that they are a sort of zoölogical specimen rather than healthy individuals.

Our grandfathers regarded it as a misfortune that they were obliged to live in tunnels for houses—that is, in city houses built in blocks, which could have sunlight only from the front and the rear. They could not foresee the contentment of well-to-do people of our generation with the still greater surrender of individual freedom which has come with the "flat." The hived and smothered millions that from necessity or from choice know only a contracted indoor existence and have become reconciled to it or even content with it—these are our real paupers, whether they be rich or

poor. It is not easy for a man to dwell in a "flat" and to be a generous-natured gentleman, nor can a natural womanhood flower out of reach of sunlight and the soil. The convenient artificiality of apartment life is the more dangerous the more comfortable it is made, for the more persons it then seduces from the fundamental virtue of a natural individuality.

MR. REED

IT has been long since the death of any public man, except President McKinley, caused keener regret than the death of ex-Speaker Thomas B. Reed. Although he had not been in public life for three years, he was called "Mr. Speaker" oftener than he was called Mr. Reed; for it was as Speaker of the House of Representatives that he impressed his strong personality on the country. The act by which he will longest be remembered was his revolutionary change of the custom of the House whereby members who were present but chose not to answer to a yea-and-nay roll-call were counted as present. By this ruling an end was put to the obstructive tactics of the minority, who, by simply refusing to answer the roll-call, had prevented a quorum from appearing to be present. For this revolutionary change in the rules of the House he was denounced as perhaps no other public man has been in recent years. Yet the Democrats subsequently adopted the same rule, and thus one method by which a minority used to thwart a majority in the House is gone forever; and its going was a great gain. It will be by this achievement more than by any other in his public life that Mr. Reed will be remembered. But he has other claims to remembrance, for distinguished service on the floor as well as in the chair.

He enlivened the public life of his period of service by a keener wit than any of his contemporaries had. In private life, too, this made him attractive; but it was a quality that probably cost him a general popularity among politicians. During his long service few prominent men or important measures escaped his sharp sallies; and sometimes they stung and stuck. The irresistible impulse to prick a humbug doubtless cost him many political friends—such friends, at least, as a man finds useful when he becomes a candidate for a presidential nomination.

But it was not Mr. Reed's wit only that made him an unsuccessful candidate for the Republican nomination for the presidency; for he did not know how to set about a task of this sort. He had to a remarkable degree the quality of good companionship with those whom he knew and really cared for, but not with the crowd. He was at once too shy and too critical to become a popular idol. Nor did he know how to cultivate the masses nor to impress himself upon them. This was not all; he did not know the masses of the American people as Mr. McKinley, for instance, knew them. In thought and temperament he kept too close to the Atlantic seaboard. To the rank and file of the voters in the middle Western States he was merely a name, not a personality; and, as they saw him, he was oftener criticizing policies than making them. Indeed, his mind was critical rather than constructive. He retired from public life because he could not approve of the war with Spain, nor of the Republican policies that grew out of it. Since he was too loyal to his party to forsake it (for he was a staunch partisan always), he could either openly oppose its policy and try to shape it to his liking or he could retire. A greater man in his place would have made a constructive effort to change the party policy; but it suited his temperament better simply to retire.

In his private life, after he became a citizen of New York, he held all his old friends and made new ones by the charm of his personality and by his inflexible character. Mr. J. G. Cannon spoke the feeling of many men when he said:

"Thomas B. Reed, the greatest in intellect, the broadest in understanding and the most courageous in conviction of all American statesmen I have known."

He was a courageous, able and stalwart man—attractive but not constructive. For this reason he is missed as keenly as any man of his generation would be, but he will take a less important place in our political history than he filled in his lifetime.

MR. NAST'S IMMORTAL DONKEY, ELEPHANT AND TIGER

THE late Mr. Thomas Nast, who recently died at Guayaquil, Ecuador, where he was Consul General of the United States, added three symbolic figures to our political life that (so far as men now living can see into the future) give promise of perpetual use.

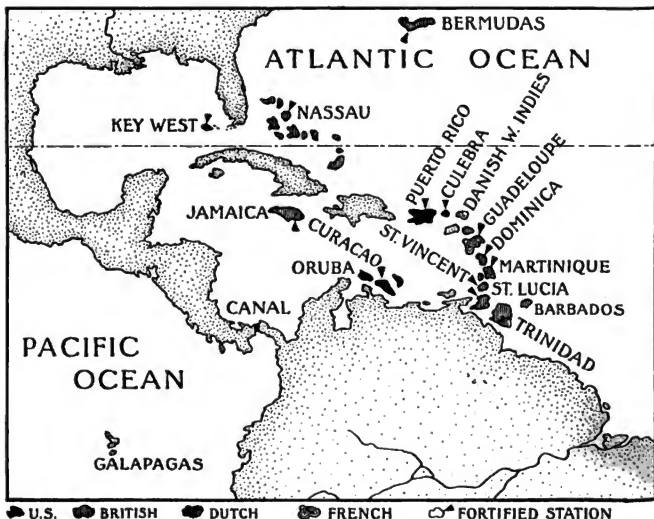
The Democratic donkey, the Republican elephant and the Tammany tiger seem likely to live as long as these parties exist. A no less apt cartoon by Mr. Nast represented Tweed in his checked suit of dollar marks. This followed Tweed relentlessly to his capture and death. In the active days of his pencil Mr. Nast did many other clever and effective things. But the three great party symbols, the donkey, the elephant and the tiger, have ever since remained indispensable to us. No other cartoonist has added so much to the permanent vocabulary (so to call it) of our politics. They are parallel in their finality with those phrases from the Farewell Address, the Declaration of Independence and the Gettysburg Address that have become, as it were, the very alphabet of our political thought and speech. Such things are called, for short, works of genius. The many clever cartoonists since Mr. Nast's active days have probably created nothing so fundamental and lasting.

THE DURBAR AT DELHI

THERE have been few more remarkable things in modern life than the durbar at Delhi—the celebration in India of King Edward's coronation on a scale of magnificence that the coronation itself did not approach, if an Oriental fête may be compared with an Occidental one. The incongruity of the elaborate spectacle is emphasized by the American birth and rearing of the lady who is the wife of the viceroy of India and by the presence of many American spectators.

The political significance of this unparalleled display of Indian wealth and splendor and pomp and ceremony by the Indian princes (all really empty of power) is that England's rule over them is made easier by a show of power. There is an irony in this that is at once ludicrous and pathetic.

Few of the Indian princes have a real loyalty to Great Britain. If you scratch a Hindu you find an enemy of Occidental civil-



A MAP SHOWING THE GEOGRAPHICAL RELATION OF THE WEST INDIES TO THE UNITED STATES, TO SOUTH AMERICA AND TO THE ISTHMIAN CANAL, APROPOS OF THE NAVAL MANOEUVERS

zation. Yet England's rule over them, after reckoning in all the evils of it, has been and is the best force for good that exists in these swarming areas. It is the only hope of the application of modern forces to those vast populations, the only hope of sanitation, of health, even of food-supply. The future of

India is as interesting a speculation as its past is an interesting study; but a little more than a hundred years of active English experience is not enough very profoundly to affect the results of thousands of years of over-crowded inaction. Such a task must be judged by century-results.

THE INDIVIDUAL RESPONSIBILITY FOR PANICS AND DEPRESSIONS

(THE WORLD'S WORK publishes every month an article in which some timely and vital subject of the financial world is taken up)

ALTHOUGH the new year finds us still in the enjoyment of that exceptional prosperity which has made the last five years the most remarkable period in our history, and although nobody sees any peril definite enough to cause immediate alarm, yet there is a very general feeling that a stringency in the money market, stagnation in trade and perhaps a panic must sooner or later come, and that perhaps they will come at an early time. Is there good reason for such a fear?

One argument for fear may be safely dismissed—the argument that, because periods of depression have come at more or less regular intervals, they are inevitable—that, do what we will, we cannot avert them. To believe that the commercial world is bound to become depressed at regular intervals, with or without cause, is to harbor a superstition.

Yet every period of prosperity does bring temptations to the use of reckless methods, and reckless methods will bring disaster if enough men indulge in them. On the other hand, a panic or the recurrence of any long period of depression is for this very reason preventable; for there is no occult or necessary reason why they should come. The whole thing is a matter of conduct—a matter of the personal conduct of men who carry on the activities of the business world. The question is whether the business world is yet sufficiently intelligent and self-restrained and can work sufficiently in union to prevent the coming of depression.

Serious disasters have been caused chiefly

by mortgaging future profits or values. The clearest example of panics of this sort is given by those that have followed land speculations. In a given community land values rise, whether for a legitimate or a speculative reason. If they keep going up men make big profits. The bigger the profits and the more men that make them, the more easily the insidious craze spreads. Presently everybody is speculating in land. There never was a better example of crowd-craziness or of the loss of judgment by whole communities than the great land "booms." Sensible men have forgotten real values in the excitement; they have forgotten the legitimate causes of a rise in value. They have lost a sense of proportion. In these crazes the land itself has sometimes dropped clean out of mind. Lots that never existed have been bought and sold and sold and bought at continually increasing prices—prices that bore no relation to values, but that were determined wholly by the mood of the speculators. Most communities have at some time suffered more or less from such a craze; and many times in our history large numbers of people over wide areas have run the course of this madness.

Such an extreme and familiar example of anticipating real or imaginary future values or profits has been cited to show how contagious any movement of this kind may become, and how under the excitement of it sensible men lose their heads. Other ways of anticipating future profits and values are far less direct and more insidious; and they are less easily recognized.

Take, for example, the organization of a prosperous industry. Suppose that there are ten competing factories, each earning a net profit of fifteen per cent. Seven and a half per cent. is, of course, a good profit if it can be continuously maintained. The ten factories are consolidated under one financial management. If its securities—in stock or bonds—can be sold on a "guarantee" or an expectation of seven and a half per cent., they are marketed. The promoters, the underwriters—everybody on the "inside" of the consolidation—receives some of this watered stock. Among the owners of some of the factories are men who prefer cash to securities. Securities are, therefore, sold to the public for this reason as well as for other reasons.

Here we have a dangerous situation. An adverse change in the trade of this particular product—which may come from any one of a dozen or a hundred causes—may lessen the profits. But we are anticipating the course of events.

In our present period of activity and of large profits hundreds and hundreds of combinations such as the foregoing have been made, some of them of enormous magnitude. Not all have been "watered" in direct and open ways, but most of them have in some way mortgaged the future. They proceed upon the assumption that large profits are to continue indefinitely. The same tendency, of course, has shown itself in many other forms besides industrial consolidations. The point is that in such a time as this there is an inevitable collapse to trade on future prosperity.

What happens next? The men who have released their money from the organized or consolidated factories and shops invest it in other enterprises. In other words, they "fix" it—make it fast. It ceases to be "liquid" capital. It takes forms that could not be turned into cash quickly. Then those who hold the stocks and bonds of industrial organizations use them as collateral for loans to carry on business or speculation or pleasure, as they choose. Most of this borrowed money also goes into "fixed" investments in a prosperous time.

In this way the property of the ten factories is mortgaged; and the mortgagees (the borrowers on the combination's securities) invest the money mainly in "fixed" ways.

Suppose the real value of these ten factories be \$100,000 each. Each could be mortgaged for, let us say, \$60,000 at the utmost. But men do not usually mortgage their factories except under the severest pressure so long as they remain "unconsolidated." But as soon as the consolidation of these ten factories takes place, they are valued at (say) \$2,000,000 instead of \$1,000,000. If they pay seven and a half per cent. on \$2,000,000 for a reasonable period their stock and bonds in good time will approach par in the market. They can be used as collateral for the borrowing of sixty per cent. of \$2,000,000, or \$1,200,000. In other words, these ten factories, which are really worth \$1,000,000 and would probably never be mortgaged at all so long as they remained separate and independent, are likely to be used, after they are consolidated, as collateral for more than \$1,000,000 of loans. Incorporation, and especially consolidation, almost always lead to the taking of a mortgage on the future.

When this process has been extended far enough, and enough productive enterprises become thus mortgaged, a more or less dangerous state of things follows. The lessening of profits—not to speak of the failure of enterprises—may at any time cause a fall in these securities. A hundred and one things may cause a disturbance. Whenever such a disturbance comes, the banks and other lenders on such collateral must call their loans—or run the risk of loss. Then follows the same thing that follows when a land "boom" reaches its height. Distrust begins, and a collapse or a panic or at least a "stringency" follows. Whatever artificial structure of value has been erected topples. Nor is this the worst; real values also fall.

The more or less regular recurrence of panics, while not inevitable or mysterious, is thus caused by the tendency in human nature to mortgage the future, which becomes too strong to be resisted in times of unusual prosperity. An artificial structure is then likely to be built higher and higher till it collapse. But, given a sound currency and crops of normal or even approximately normal abundance, there is no other reason why serious depressions and panics should be recurrent. The whole matter is one of prudent conduct and of good business foresight—this, and nothing more.

It would be an immense gain if, as the

New Year begins with our prosperity still running high, every man of affairs would bring the matter home to himself, would examine carefully to see how far he has built on an artificial or possibly dangerous basis, how far *he* has a part in the gigantic structure of credit and confidence that has been reared these five or six years and whether it be sound as far as *he* can affect it. Individual care and foresight by a large enough number of men of the right kind can prevent the recurrence of serious depression; and there is no good reason why we should have a panic again in the United States for as long a period as men can foresee.

It is a magnificent and impressive thing—this vast structure of confidence and credit that now exists in our world of finance and commerce. Almost all productive industry is making large earnings. There never were such large dividend payments before. So nearly universal is practical success that every man and every corporation that has not been convicted of dishonesty has better credit than ever before.

But the basis of it all is not real values, great as real values are. The basis of it is credit, is confidence. If this be shaken to the slightest extent trouble will follow. The continuance of prosperity, then, depends on the individual character of every man of financial or commercial importance. If every such man keep his credit within safe distance of his real values we shall go on indefinitely as a prosperous people, and prove by a happy experience that panics are not bound to come.

Such is the obvious general principle of danger, of temptation and of prevention.

Let us see in a general way if facts now warrant fear.

As regards the solidity of our actual recent growth in wealth there is no doubt. Nothing like it was ever before seen in the world. The output of iron and steel, for example, increased eight million tons during the last five years—as much as it gained in the preceding quarter of a century. The enormous increase in railroad traffic and earnings and of dividend payments every half-year, the growth of our export trade in manufactures—all these substantial facts have been presented and explained over and over again in this maga-

zine. It is a substantial basis of prosperity. Most of this phenomenal growth is solid and most of it is permanent. More than that, it will go on. Our commercial "invasion" of other countries has only begun, if we are wise. Nor are the opportunities of expanding domestic trade by any means all used. We have created real values.

As regards the danger—we have built up speculative values also, and we are using money faster than we are making it—at least in the prodigious development of industrial enterprises. We are mortgaging those that we have in order to build others. The whole question is whether we are doing this at too rapid a rate. The enormous increase of bank loans and discounts tells the story.

Now as to prevention—the general apprehension of danger is perhaps the best preventive of disaster, if it lead to conservative action soon enough. There are many evidences that such conservative action is being taken in time. The banks are gradually lessening their loans. They are lending smaller sums on those industrial securities that are known to be watered. Another very strong conservative force is the ever increasing unification of the commercial and especially the financial world. When one important institution encounters danger, the others quickly come to the rescue, so that no panic may ensue. This unification of interest and action is becoming in effect an insurance against fright. It supplies the one thing needed to prevent disaster from spreading by sheer contagion from cases of merely personal mismanagement or misfortune.

But the greatest preventive force of all is individual—the extent or degree to which every man of affairs regards the financial and commercial community as a thing in his own keeping, and looks upon himself as personally responsible for so much of it as he touches or can affect. It is at last a matter of character.

The time will come, and surely we ought already to have reached such a stage of commercial civilization, when every man will have a feeling of responsibility to the business community—will have a commercial conscience which will forbid his doing danger to the great fabric of credit upon which the modern commercial world rests.

FRIEDRICH ALFRED KRUPP

THE funeral procession of the great German ironmaster, Krupp, the other day wound out of a small, dingy, smoke-stained cottage at Essen. The Emperor with his suite followed bareheaded among the chief mourners. Many of the most noted men of the empire were there. The man they bore to his last rest was the third head of the firm of Friedrich Krupp, and the small cottage whence the long and brilliant train of sorrowers started was the humble cradle of this world-renowned house.

Nearly a century ago—in 1810—the firm was founded with very small capital, during the dreariest days of Germany's political debasement, when Napoleon's eagles flew wide and unhindered. In this little frame building, with barely space enough for him and his large family, the founder of the firm in 1826 died of a broken heart, at the early age of thirty-nine, leaving his business affairs in an embarrassed condition. But his eldest son, Alfred, a precocious boy endowed with indomitable energy, with the consent of his mother became at once the active head of the firm. He was then just fourteen. In 1873 Alfred Krupp, having achieved meanwhile a measure of business success such as had never before fallen to any man in Germany, affixed a small and modestly worded tablet to the door of this low-eaved cottage, and declared that it should stand as a memento of his family's humble origin and as a warning to his descendants' pride.

In 1887 Alfred Krupp died. He was a born leader of men, and with matchless pluck, strong common sense, thorough and practical acquaintance with the manufacture of steel and iron in all branches, he coupled a wonderful resourcefulness and a combative and domineering spirit. He left his son, Friedrich Alfred, the sole owner of the huge enterprise, which even then was composed of many and diverse branches.

Friedrich Alfred Krupp, the third head of the firm, who recently died, was born on February 17, 1854, and he was a man of entirely different fiber.

There was nothing aggressive in his nature. On the contrary, he was of a mild and amiable

disposition. He disliked publicity and the bustle and clamor of public life. He left an estate valued at \$150,000,000, and enjoyed the largest income in Germany. Wealth and the power that great wealth brings were at his command. At his palatial estate, the Villa Hugel, near Essen, he dispensed on many occasions more than royal hospitality, and he associated with monarchs on terms of intimacy. Yet he was never a happy man, and his career, which was determined by an inheritance whose responsibilities he could not shirk, was not the career that he would have chosen if he had been free to choose. The Emperor of Germany was his intimate friend, and to him he once said: "This big fortune has been a curse to me. If I had not had it my predilections would have been for art and literature."

He had great natural talent and a sound and well-trained taste. He was a generous but judicious patron of art. His admirable collection of paintings in Villa Hugel, which comprises none but masterpieces, and his fine aggregation of *objets de vertu*, attest this. During conversation he would often dwell regretfully on the fact that the responsibilities of his position left him no choice in life; he cordially disliked pomp and circumstance, affectation and insincerity. He married a lady of rank, Margaret Baroness von Ende, and the match was a love match. He, like his father before him, scorned all titles and distinctions, except those that came to him in the way of business. He preferred to remain plain Herr Krupp. He entertained his friend, the Kaiser, many times and (just to name a few others) the Emperor Francis Joseph of Austria, King Edward VII. when he was Prince of Wales, King Carlos of Portugal and King Leopold of Belgium; but his manner toward them was never tinged with that obsequiousness to which monarchs are accustomed. With them, as with his workmen, he was always unaffected and unassuming.

He was a man of fine feelings, of a lofty nature and of thorough and wide culture. His education had been most comprehensive. He went through the usual eight years' course

at the public "gymnasium" (or lower college) in Essen, then studied at several of the best German universities, and was afterward appointed *Commerzienrath* (Counselor of Commerce), later on *Wirklicher Geheimer Rath* (or Privy Counselor of the Crown), and was made a member of the Prussian *Staatsrath* (Council of State). In 1893 he was elected to the Reichstag, and was likewise elected to the Prussian Diet.

He was a bitter foe of Socialism. During one of his few Reichstag speeches he fiercely attacked that party, saying among other things: "It is the business of the Socialists to stir up strife between employers and employees—right or wrong, with or without reason. The Socialist leaders and agitators hate no one so much as the large employer who tries, so far as in him lies, to be just, kind and sympathetic to his men, for that robs their arguments of power and relegates them where they belong—to oblivion." The Socialists never forgave him this. Indeed, there was war to the knife between him and them from the time he succeeded his father, and he would tolerate no Socialists, especially no Socialist agitation or literature, in his wide domain.

He took a deep and steady interest in the welfare of his employees, high and low alike; and, though he did not very often meet them personally, through his counselors and chiefs of departments he kept himself always accurately and closely informed about every detail that entered into the life of even the humblest of them. The unbroken chain of benefits with which he loaded his vast army of men—benefits running into many millions and comprising everything that thoughtful and wisely directed kindness could suggest—are uncontestable proof of this. He went, in fact, much further than his father ever did. To mention just one particular, he has made it possible for his employees to build and own comfortable homes of their own, the number of such houses (in every instance including land for gardens and fruit trees) amounting at present to several thousand in Essen alone.

Friedrich Alfred Krupp possessed the great gift of choosing able men for his assistants, and of not interfering with them except in case of necessity. Of the most competent and original-minded of them he formed his "cabinet." This Board of Directors numbered fourteen members at the time of his

death, of which twelve are in Essen and one each in Magdeburg and Kiel. He made it the interest of these able men to serve him well, for, like Mr. Carnegie, he paid them not only large and increasing salaries, but admitted them to a share of the profits in those particular enterprises over which they exerted control. It was largely owing to this far-sighted and shrewd policy that the firm prospered after 1887 at an even more rapid rate than during his father's long management. Within the fifteen years of Friedrich Krupp's control the business of the firm was more than doubled, its capacity was trebled, its enterprises were multiplied, and its profits accumulated so that the total property now owned by the firm of Friedrich Krupp is valued at twice as much as at his father's death. More than 150,000 persons are dependent upon the Krupp enterprises for their bread, and of these 43,083 are men. Since the father's death the son introduced smokeless powder, and ordnance for the same; began the manufacture of armor-plate (now one of the most important branches of the firm's work); he purchased the gigantic Gruson Works near Magdeburg, the specialty of which is the manufacture of turrets; he purchased and immensely enlarged the Germania Shipyards in Kiel and elsewhere; and he made practicable a number of the most important inventions in the making of steel tools, implements, ships, guns, etc.

W. Whitwell, President of the English Iron and Steel Institute, in conferring the golden Bessemer medal this year upon Friedrich Alfred Krupp, paid a glowing tribute to his skill and far-sighted wisdom as shown in the singularly successful management of the works.

Without being an enthusiast as a manufacturer, as his father had been, the son's wider horizon had doubtless much to do with the phenomenal growth of the firm under his leadership. During a visit paid the Essen Works a number of years ago, I had the pleasure of a conversation with him in which he spoke about the industrial development of the United States in a manner which showed him little less than a prophet. His remarks then came particularly true as regards that branch of trade with which the great ironmaster was most familiar, viz., the production and utilization of iron and steel. And a year before, at the Chicago World's

Fair, Herr Krupp had already proved by the quality, size and arrangement of his special exhibit what an immense importance he attached to this market and its coming competition.

He had some peculiarities. For one thing, he hated to be spoken of as the "Gun King." Small wonder, for whatever the firm may have been in his father's time, it now owns a series of great enterprises of which more than seventy per cent. of the total values produced are other things than guns and ammunition—things like railroad and ship implements that work for peaceful ends. He was a foe to war, a thorough man of peace. He led a spotless and tender family life, and was a most devoted and indulgent husband and father. He leaves no sons, but two daughters, Barbara and Bertha, survive him. The management of the firm will devolve upon his nephew, who has been very active in it for a number of

years. In demeanor he was singularly gentle, almost shy, and this was probably, at least in part, due to the fact that he never enjoyed robust health. His digestion was weak, and he was debarred from most of the pleasures of the table. At the grand banquets he used to give he contented himself with Apollinaris water, and he rarely was allowed a cigar or cigarette by his physician. For several years past, too, he had been under constant medical treatment because of a nervous depression. This, with some organic troubles that came to torment him, made the last five or six years of his life a burden rather than a pleasure. His failing health was generally understood and discussed in Essen for years; but it is probable that but for the savage attack upon him by the Socialist press his life would have been prolonged. He was one of the greatest captains of industry that modern conditions have produced.

MODERN METHODS OF SAVING SHIPS

HOW NEW INVENTIONS HAVE SIMPLIFIED AND MADE SUCCESSFUL MANY A WRECKING OPERATION—OLD METHODS CONTRASTED WITH THE NEW—STRIKING STORIES OF WRECKS—HOW THE SHIPS WERE SAVED

BY

MORGAN ROBERTSON

(AUTHOR OF "MASTERS OF MEN," ETC.)

A BRIGHT lantern, elevated above the water at the end of a long pole, and given a slow right and left movement across the wind, would look on a dark night very much like the riding light of a craft rolling at anchor; and strange vessels, seeking port and good holding ground, would head toward the light. When they struck the bottom and became, under the law of custom and precedent, "wrecked," they became the perquisites of the discoverers—always the men that manipulated the lantern—stout-hearted, strong-limbed fellows, able to enforce their rights against the protests of misguided mariners.

That was old-time wrecking. Today it is a business that requires integrity and ability, big central offices with long-distance tele-

phones, big tugs and towlines, and a complete equipment of diving apparatus, pumps, pontoons and derricks, with a force of men trained for years in this peculiar work.

On the Florida Reef, it is true, every fisherman, sponger, or beachcomber—"conches," they are called—who owns or can lease a boat of any size, takes out a wrecker's license. Let a vessel but strike a reef and up will come the wreckers by the dozen to wait in a circle, like vultures, while the anxious officers and men strive. Not a conch among them can be prevailed upon to work, even at the highest wage. When hope is given up—when, with a gale coming on, the sore-hearted captain decides to abandon, and save the lives of his crew, no sooner does his boat leave the side than there is a rush of the wreckers; and

THE WRECK OF THE *BLAIRMORE*

Pushed into shallow water after coming to the surface in San Francisco Harbor

the first one aboard has the legal right to salve the ship and cargo.

If these simple-minded people would combine instead of competing, many a ship and cargo could be saved to the owners or underwriters and their ultimate reward would be heavier; for the "chance of loot" is little compared with the certainty of salvage. So certain and so generous is this salvage that wreckers of larger growth and knowledge of law—the wrecking companies of the seaports—on learning that a ship is in trouble will rush their tugs and equipment to the spot, and labor, often against the wishes of the ship's officers, who may think they need no help. But a bargain is made if possible for a sum greater than would be the award of the courts, and this, if contested later, need only give way to the always certain salvage. The wrecking companies also respect the unwritten law of the craft, and the first tug to get a line to a stranded ship, or an anchor down near a sunken craft, has first rights.

Wrecking has two distinct phases—the pulling of stranded craft from the beach and the raising of sunken craft from the bottom. Another and new method, the salving of cargoes with submarine boats, is not generally used, though a modest man named Simon Lake, with a genius for keeping out of print and a very practical submarine boat of his own invention, has been nosing around under water for the last three or

four years and getting rich on his findings. Wrecking has to do with the reclaiming of wrecks, not of cargoes.

When a ship goes ashore she lies broadside on and punches holes in herself or strains her planking, so as to fill with water up to the outside level. If she does not, the divers are saved the work of patching and pumping her; but when they have made her tight, the floating of her is merely a question of a long, strong pull of tug, capstan or windlass. Tugs are tried at first. Six tugs dragged the *Kilbrannan*, ashore on a beach nearly as flat as a floor, into deep water. But in heavier effort, when six tugs, or as many as the ship



Photographed by Higgins

THE *POTRIMPOS*

Wrecked in the breakers off North Beach, Washington

THE STEAMSHIP *PARIS* ON THE ROCKS

Copyright by W. M. Harrison, Falmouth



Photographed by Maynard

THE BOW OF THE UNFORTUNATE *UMATILLA*,
BEACHED IN ESQUIMALT HARBOR,
BRITISH COLUMBIA

has bitts and masts to fasten to, cannot pull her afloat, advantage is taken of elasticity and buoyancy. There is a trick known to teamsters and horsemen, on which bets and reputations for strength have been won, which illustrates this. A moderately strong man may brace his chest against a tree and, extending his arms at full length, grasp the whiffletree of a team of horses. Provided that his grip is not loosened by the first plunge of the animals, they may tug with all their strength and not tear that whiffletree from his hands; but, if the whiffletree be extended at the end of a long, elastic rope, they could not only drag his arms from their sockets, but might pull the tree down if his arms and his grip and the rope were strong enough. A tug may not be able to drag a heavy weight from a dock if it is attached by a chain, but if a long hawser be substituted the tug stores up in it the momentum of her mass during the time she is stretching it, and this, acting with her undiminished pull at the moment the stretching ceases, will jerk the weight into the air. In this way the ponderous ship is dragged down the sand toward deeper water; and it matters little at which end of the elastic cable the power is applied. In the

case of a large craft—a steamer, for instance, thrown high on the beach and imbedded in the sand, too heavy a drag for tugs and tow-lines—four large anchors, each nearly four tons in weight, will be carried out and dropped with cables of 200 fathoms' length and fifteen inch circumference leading in to the ship. Four powerful tugs might drag on these four cables until they parted, or a strain could be put upon them from the ship that would part them or drag the anchors home, without budging the wreck an inch. The fifteen-inch cables must be tautened, at first with capstans and winches, then by tackles and luffs. The power that can be gained is enormous—sufficient to tear out the sides of the ship. But the cables must be considered; their elasticity, which is about thirty feet to the 200 fathoms, must not be destroyed. But



Photographed by McCurdy

THE SCHOONER MINNIE E. CAINE ASHORE

On Smith Island, Washington

**WRECKERS RAISING THE UMATILLA**

Showing the cofferdam at work

Photographed by Maynard



Photographed by Fisher

SHIP KILBRANNAN ASHORE IN PUGET SOUND

if they are tautened to moderately near a straight line the wreckers may wait for the aid of the sea.

If the ship has gone on at low tide, moderate waves and a high tide will suffice to lift her, but if at high tide, nothing but a storm nearly as severe as that which threw her ashore will furnish seas heavy enough; and often the wreckers must wait for the spring tides.

A sea that will lift a stranded ship will first break over her, and when at last she quivers and "goes to the cables," she comes down with a shock that seems to start every spike and bolt in her framework. But after each jump seaward the cables are tautened, and little by little—it may take two, three or a dozen tides—the ship litches down toward deep water until she floats. An experience on the



"RESURRECTED"

A vessel coming to the surface after being pumped out by wreckers

beach ages a craft more than a score of storms at sea; every plank and frame has been twisted a little; every bolt and spike is looser. And in an iron ship no one can tell how many rivets are half sheared through.

Sometimes a ship can be pushed instead of pulled into deep water. This operation occurred in the case of the big four-masted schooner *Minnie E. Caine*, ashore on the precipitous beach of Smith Island. A row of hydraulic jacks arranged along her side moved her the short distance necessary to float her.

A craft caught in a quicksand is usually a total loss, though a coffer-dam sometimes saves her.



Photographed by Holmes

A SHIP ASHORE ON NORTH BEACH

If a tight ship gets into the grip of a quicksand it will be sucked down until solid bottom is reached or the quicksand solidifies; and inertia and friction will hold it there. A quicksand wrecked the big ship *Glenmorag*, which ran ashore near the mouth of the Columbia River in the winter of 1896-97. The wreckers pulled her off, but carelessly allowed her to touch a soft spot, and she is there now.

It is often necessary to lighten a ship of cargo and ballast in order to float her, and this brings an additional danger: she may



THE SHIP *BLAIRMORE* BEING RAISED

capsize when water-borne. The German bark, *Potrimpos*, which grounded at high tide near where the *Glenmorag* piled up, and which made much work for the wreckers thereby, undid the whole by toppling over immediately the support of the sand was taken from her.

this limit a small craft can be lifted, cargo and all, by a derrick scow until her deck openings are out of water; then she can be patched by the divers and pumped out on the spot; or, half submerged, she may be towed in her slings to a drydock and there repaired.



ICE-BOUND

The wrecking operations on the *Minnie E. Caine* hindered by the freezing of the apparatus

She filled and sank in the surf. Yet there was not a leak in her.

No method of raising sunken craft is of use for a depth greater than twenty-five fathoms—the limit of diving operations. Within

But a big craft is too heavy to lift with derricks. Pontoons are employed in most cases, though when a ship can be patched and sealed up by the divers, and wind, tide and sea are easy and favorable, she may be raised

by her own buoyancy. The English ship *Blairmore*, which capsized and sank in San Francisco harbor, was raised in this manner. She came up on her side and was righted later by skilful grounding.

One successful trick in the trade, when the craft is not too large, and when the deck can be sealed but not the leak in the bottom, is to pump in compressed air, which, of course, forces the water out. But a craft rising from the bottom of her own volition is apt to be erratic in her movements; she may turn over as she comes, or may come like a bubble and upset the helpful wrecking craft above her.

But, all in all, pontoons are the main reliance of wreckers in raising sunken craft. They are strongly built, scowlike hulks, submergible, with pumps to empty them, and wells from the deck down into which lead the heavy chains by which wrecks are lifted. Two pontoons at least are required, and the chains pass down the wells of one, under the bottom of the wreck, and up



STEAMSHIP *WILLIAMETTE* ASHORE AT UNION,
BRITISH COLUMBIA

Its bow was lifted from the ledge by logs running through the hull and resting upon scows

through the wells of the other. They are tautened at low tide, with the pontoons full of water, and made fast. Then, from the rising of the tide and the lifting power of the



DIVERS AT WORK PATCHING THE HULL OF A VESSEL

Photographed by Gleason



Photographed by Davies

**COLUMBIA RIVER LIGHTSHIP EN ROUTE FROM
PACIFIC OCEAN TO BAKER'S BAY**

The ship was taken about a mile through the woods

pontoons as the water is pumped out, the wreck leaves the bottom. At high tide, and with the pontoons empty of water, it is towed into shallower water until it grounds; then with the going down of the tide the pontoons are again flooded, the slack of the chains taken up, and the operation is repeated. By and by the receding tide will expose the leak

or bring it within reach, and when it is plugged or patched the wreck may float of its own buoyancy. But it requires months of hard work. Pumps may break down, pontoons leak, chains part, anchors drag, or drifting and unmanageable craft may crash into the outfit at the last moment and the work of weeks must be done over again.

Where the tides are high, as they are in English and Canadian waters, pontoons need not be emptied and pumped out. They are merely an aid to the lifting power of an ordinary tide such as runs in New York harbor, and a good substitute where there is no tide at all. The Thames Conservancy, the largest wrecking company in London, seldom needs submergible pontoons—"camels," as they are called over there—and on the Great Lakes the pontoons are large and deep, sufficiently so to lift a wreck to the surface. And as shelving beaches are scarce in these waters, a wreck is usually patched and pumped out while slung in the chains.

The wrecker's life is full of danger and daring, with rush of storms and high tides, with the blow of the salt sea in his face, trusting his life to swaying ropes and the worn windlass, and through it all governing and mastering the sea. His work, in its application of modern invention, is a new evidence of growing human control over natural forces.



Photographed by F. H. Canaris

THE LAST STAGE—DISMANTLING AN OBSTINATE WRECK
Glenmorag on the beach near the mouth of the Columbia River



THE BIOGRAPHY OF AN OFFICE BUILDING

HOW THE TYPICAL AMERICAN SKY-SCRAPER IS DEVELOPED FROM THE
SIGNING OF THE CONTRACT UNTIL THE BUILDING'S COMPLETION

BY

ARTHUR GOODRICH

Illustrated in part from photographs loaned by Clinton & Russell

ABOUT the time that a foreign traveler remarked that New York was beginning to look like a burying-ground that was all headstones, and a quick-witted American retorted: "Fifteen-story headstones that mark the decay of European supremacy," the directors of a well-to-do company which owned land in the centre of the business district in New York held their annual meeting. The solid old four-story building that had covered the site for half a century was scarcely paying for itself. The land had increased enormously in value, and taxes and general expenses had grown in proportion. Business firms were clamoring for office room, and there was a large space between the plot of ground and the sky if it were only enclosed. Within a few weeks the

company selected architects to enclose it as high as nineteen stories. And so began the construction of another of these great automatic machines of modern business through which, day after day, thousands of human beings are hurried, leaving a product that scatters to the ends of the earth and helps to feed, clothe, carry, inspire, ruin, and bring justice to hundreds of thousands in its track—a versatile but inexorable force over which its makers have no control.

It was made much as any other automatic machine is made, a machine built on a model that has already been used a hundred times, nearly every part of which merely carries out an old formula. The only variation is made to meet some difference in the ground on which it is set or some particular



AFTER THE OLD BUILDING HAS BEEN CLEARED AWAY

Two derricks already at work



SINKING THE PNEUMATIC CAISSONS

Into the midst of the quicksand to the solid rock



THE FRAMEWORK BEGINNING TO RISE

product it will evolve. A Frenchman who looked twice within two months from the top of one of these buildings at the bare skeletons of steel that rose on every side, said in wonder:

"You build these high buildings more rapidly than we build cottages of wood."

He saw only the putting together of the structures—their physical erection. They were built months before in brightly lighted offices in buildings almost identical with them.

This building, the architects and contractors found, presented its individual difficulties.

sons were therefore decided upon, the number of them was settled and the exact spot where each was to be sunk and their probable depth, and the time to be allowed for their completion was estimated, all with the aid of a foundation specialist, a man who builds downward only.

This done, the building began to rise on paper, an enormous puzzle of interwoven lines and numerals and hieroglyphics worked out on many broad drawing-boards. Each floor as it was completed and checked was



WORKING ON THE EDGES OF THINGS

Putting together the office-building framework

The ground upon which the old brick structure stood was, as one of the engineers epigrammatically remarked, "just as near being quicksand as it could be without being," a running, unsteady foundation for any heavy load. New York is founded on a rock, but in many places this foundation of the island is far down below the surface. Nothing but the rock itself, however, would be sure to hold the hundreds upon hundreds of tons of the building and its contents. Pneumatic cais-

sons were therefore decided upon, the number of them was settled and the exact spot where each was to be sunk and their probable depth, and the time to be allowed for their completion was estimated, all with the aid of a foundation specialist, a man who builds downward only.

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sons which were to bear the great weight the wall of the adjoining building was distant more than three feet. To gain a support for that edge of the structure steel girders were planned which ran obliquely from the nearest caisson up to the outer framework of the ground floor. These, with the cross-girders of the floor and the broad, upright steel beams,



THE DERRICK

Which lifts the great weights of beams and girders

formed triangles by which the load was distributed to the caissons. Except for this, the structure was merely a skeleton of steel beams and girders mounting upward with unvarying progression until the topmost framework was in place.

Long before the first squad of workmen was sent against the old building, every piece of steel and all the stone and brick that was

to cover the frame was planned and ordered. Each specific beam was marked for its place and for the exact position it was to occupy; each hole for rivet or bolt was located, each stone was measured for its final resting place. The machine was built before a part was made, before the ground was cleared for action, before the great rushing public that, only a few doors away, was settling values for the republic, and which surged past and through the old building day after day, knew that the transformation was to come. It was like the plan by its leaders of an army campaign in which there was to be no opposition and no chance of failure. The campaign was made in the commander's tent before the men marched.

So the building went out on paper through the mails to mills where the furnaces glow with the heat of seventy times seven, and clashing machines mold and form and punch the heavy steel, and creaking overhead trolleys carry its great weight, while men, obscured by the mighty forces they have created, direct them; to quarries where power drills loosen granite boulders and derricks lift them upon cars which carry them away to be shaped; to yards where hot ovens bake brick for the body of wall and terra cotta for the outer shell and the floors. And when it returned it came like a well-formed army of steel and stone; so many parts today, so many tomorrow, enough for each day's work, and every piece minutely ready to take its place in the structure.

In a little more than a month after the first workmen were turned loose on the old building it was gone. Two heavy derricks lifted the weights and its four stories were soon carted away. Then began the sinking of the forty-one caisson shells, and the foundations were dug down fifty feet to the solid rock. As the digging went deeper and deeper, the sandy ground would have caved in and would have run if additional air pressure had not been crowded down upon it to hold it in place. One of the new men coming, tired, out of the caisson where he had been working under the additional weight of air, remarked to another going in to take his place:

"It's aisy for you down there. You're so small there ain't much pressure on ye."

And when the other tried to explain, and did so by telling him that, in the open, there was always fifteen pounds pressure to the



THE STEEL SKELETON TAKING SHAPE
After the first stories are outlined



BUILDING FROM THE TOP DOWNWARD

Showing the central stories built upon the mere framework, while the upper stories are still uncompleted



THE OFFICE BUILDING COMPLETED



AT THE ENTRANCE



THE CROWD ON THE STREET

square inch, he scratched his head and said thoughtfully:

"Is that so, now? That must be how it's so hard to work. It ain't decent for an Irishman to work continuously under pressure. Let's strike."

From the rock foundation up they filled the caissons with concrete and capped each with a broad square of granite. This had, in all, taken two months. The floor was ready for the great machine.

Half a regiment of men—men of many races and creeds—met the first load from the



THE TYPICAL CIGAR STORE

rolling-mill, and the upward march of construction began. Steam-engines began to puff and sigh as they lifted the big girders up to where workmen caught them and riveted them into place. Gangs of men, each under a foreman, rushed enormous chiseled boulders across the rough flooring other gangs had laid, and still others, as the building progressed, laboriously swung loads of wood up the elevator shaft. With the increasing floors derricks were rushed upward to support the work of the men. Individual deeds of daring were done on the frontier floors as they

pushed up two stories at a time. Men, perched at the top of protruding beams in the track of the cold wind, caught and fastened the great shafts of steel that might either crush them or send them hurtling off into space. Others, in pairs, were swung upward at the end of long hawsers, and still others, in pairs, walked the narrow girders of the top stories, each carrying the end of a bit of temporary flooring. Back of these, full companies labored less spectacularly, carrying hods to the hoist, distributing material, laying the enclosing wall or the floor of hollow terra-cotta and cement, handling the engines and the derricks, tending the campfires on each floor from which the glowing rivets made certain the ground already gained; all marching steadily upward as if, the earth having been conquered, they were storming the heavens.

All this grim, noisy, effective activity was under the control of a workman who had risen from the ranks. Some Italians were here carrying hods for him who had worked beside him years before. He knew the plans of the construction to a detail, but rather as a man who follows than as one who creates. It was his duty merely to direct the distribution of material so that it would be easiest at hand, and to get the work done. To him delays were fatal; speed and care the end of existence. Once when the framework stood ready for the wall which was to close it in, he found that the brick and stone for the walls of the lower stories had not been delivered. He reported his difficulty to the engineers.

"You have the material for the upper floor walls?" they asked.

"Yes," he said.

"Then finish those first."

And so he set his men at work building apparently from the top downward, for in these steel buildings the framework carries the entire load; the brick and stone merely close in the building and decorate its exterior, and each floor carries its own load. Thus the subordinate officer carried out the mechanical plan quietly. He overheard



LOOKING DOWN AN OFFICE-BUILDING CANYON TO
THE COMPLETED STRUCTURE



IN THE OFFICE-BUILDING DISTRICT, NEW YORK

In irregular lines, the high buildings rise like fortresses

one of the younger workmen answer questions from a bystander with a blank "I don't know." And he promoted the boy because, as he told him, "If you don't tell what you don't know to people who know it all, there isn't any time lost." But he led his men vigorously, holding his subordinates strictly to account for the men under them, and getting the work completed within the specified time.

But back of them all were the men who created the plan. To them each story was a duplicate of one they had already constructed on paper. The army of workmen were merely assembling the parts they had formed. Each shaft of steel was located by its number, and the upper or right end was marked so that only stupidity would turn it end for end. An engineer, inspecting the work one day, pointed to a few out of a hundred beams that lay ready to be hoisted into place, which were all exactly alike, and said quickly:

"What are those doing here? They go in the fourth story of the Windsor building."

And at another time, as he casually passed the structure and looked up at the ninth story, he called out to the superintendent that one of the small girders at that height was wrongly set. He knew, because that girder did not coincide with the visualization of the building he had had before his mind for months. To him the superintendent came when material was delayed, when there was some seeming mistake in the filling of an order. To him a walking delegate of one of the unions came, knowing that the building was contracted to be finished at a certain time, and demanded higher wages for the men.

"Is that the limit you will ask for doing the job?" he asked the delegate.

"Yes."

"Will you sign a paper to that effect?"

"Yes."

"All right, they shall have it."

To him the directors of the company which was paying for the construction came with objections and suggestions. Such a firm would take this entire floor if these alterations could be made to fit their needs. All these things must be arranged and carried out. Plasterers and decorators were at work below long before the upper construction was completed; and while the workmen were still laboring at the elementary finishing on some floors, on others the offices were already

occupied, the elevators were running regularly and the building was being heated and ventilated and lighted. It was more than a week before the contract time for the building was up—a year from the first breaking of the ground—when the final decorations on the last floor were finished. But when the shell was completed the engineers lost their heartiest interest. There were new constructions awaiting that would tax their skill and care much as this one had.

"In the old buildings," one of them said the other day, "I felt a real interest. Each had a personality. I've always considered them old friends. These are mathematical problems that are interesting to solve, but once they are done they are forgotten."

The reinforcement of workers which at first aided and in the end superseded the men who had constructed the shell of the building was of many sorts: plasterers, painters, paper-hangers, decorators, marble workers, mosaic workers, metal workers, each rushing to complete the task of his predecessor, whose mortar or whose paint was scarcely dry. The swift, smooth-running hydraulic elevators had been churning up and down for a month with more or less regularity. Below, in the cavern around the granite caps to the caissons, the big boilers and bins were installed, with a great wheel like a windmill to fan cool, fresh air to the furnace men. Back of this grimy space ran the exquisitely clean tiled floor of the engine-room, where the great engines swing their thick muscles to drive the elevators; to send air with the aid of sweeping fans—past heated pipes if warm air is needed—into the hundreds of rooms above; to light any or all parts of the structure by electricity, and by their very waste to furnish heat by steam at any degree to the building. Over at one side the refrigerating plant was placed from around the ammonia coils of which chilled water is sent into various parts of each floor. On one of the upper floors ranges and shelves and all the apparatus of the most modern kitchen were set up rapidly for the restaurant. Marble counters over which all manner of interesting everyday things were to be sold fell into line on the street floor, and a big bronze booth for a telegraph company accompanied the many bronze decorations into place. Thousands of dollars' worth of gold and paint and burlap covered plaster that was hardly dry. Smooth marble columns

rose where two months before were open air and débris. Back of the engine-room, resting on the ground, was built a big safe deposit vault, guarded by heavy metal doors with many alarms for the building detectives, by massive gates, by constant attendants, and, below, by the impassable quicksand. A house telephone was installed connecting the various important stations with the complete apartment which was built on the roof for the man in charge of the building. By this means he is able to communicate quickly with any of the half a hundred helpers he has from the cellar to the roof.

In the midst of all this rush of final preparation, the men from the outside who had been already attracted to the offices the building was to offer were examining and deciding and demanding alterations in the suites of rooms. Everything was done to meet their wishes. Whole floors were remodeled until upwards of half a million dollars were spent remodeling the already completed interior. When the last workman on the building had gone and it was in working order, there were two suites unoccupied, and these were rented in a little more than a month.

The population of the building is as varied as that of a town, and it is safe to say that more business is done within its walls than in any town of ten times its one thousand inhabitants. Banking houses handle, behind handsome marble desks, their hundreds of thousands, which go out to mingle with the country's prosperity and develop new projects of industry and ingenuity. Insurance companies pledge their enormous capital to the lives of men in California and Florida, and to the safety of ships rounding the Cape. The tickers in many brokers' offices, over which noisy stock speculators and sober investors touch elbows, click out the news concerning the great mass of world wealth for bits of which thousands daily match their wits and their energies. Lawyers make plans in these rooms that will free the innocent and punish the guilty; and promoters sell South American mines and West African land rights. The offices of a great Western railway system bind the East and the West with bands of steel and commerce, and exporters send goods from New Hampshire mills to the Orient. An energetic man with military carriage, after an hour's conference, is just completing the sale of an important

block of land to the proprietors of a great department store, while directly above him an insignificant looking little man, wheeling nervously in his chair, is outlining to confederate capitalists a scheme that will give them control of a big street railway system. At his left, in turn, separated by a thin partition, an engineer is solving the problem of building a fifteen story building on a narrow triangular plot of quicksand in such a way that no disturbances of the soil shall shake the foundations of adjoining structures. Typewriters, rapid fire guns of industry, rattle away in every corner of the floors. Bells, each ringing for a purpose, sound in unmusical confusion on every side. Every landing is an eddy in its swirling crowds that hurry up and down, in and out, throughout the long days.

From the time these men enter their offices in the morning until they go at night, many of them need not leave the building. Messenger boys rush in and out with messages. By telegraph, cable and telephone they can talk with London, San Francisco, or Fiftieth Street, as they wish. Supplies are there, their restaurant is there, their barber, their newspaper, their bank, their insurance company, their own police and detective service, their own fire department, their broker, their lawyer. It is a complete community in itself.

At night the thousands drift away, the engines are quieted, the outer gates are closed, a single elevator runs irregularly. Outside there is the deathlike stillness of a deserted town, and the tread of the policeman on the pavement echoes bleakly down the cavernous streets. Within only the caretaker and a few helpers remain. But the great machine has scarcely time to rest before it is again throbbing away with its entire strength, straining to handle smoothly the masses of hurrying people that crush in upon it. Every day the force it unconsciously, mechanically manufactures reaches further into recesses of unknown lands and increases its grip on world-important affairs. The army of stalwart buildings which is growing up from every corner of the island forms the rampart of American industrial defense, the vanguard of American commercial supremacy. In years to come they may pass one by one and be replaced by others greater than they, but the forces they make today are a part of history.

THE BATTLE-SHIP OF THE FUTURE

HOW NAVAL WARFARE WILL PROBABLY CHANGE—THE
INFLUENCE OF THE SUBMARINE BOAT—OFFENSIVE AND
DEFENSIVE TACTICS WHICH ARE ALREADY FORESHADOWED

BY

LEWIS NIXON

THERE is one possibility that makes anything like an accurate forecast of the type of war-ship of the future very difficult. This is the chance that there may come at any moment a complete revolution through the discovery of some agent of propulsion that will do away with coal and the steam-engine. At present the stowing of machinery and the carrying of coal in a measure control the construction of our ships. The room occupied by these two all-important elements is enormous and dictates arbitrarily construction along certain lines. Venturing on the future, nothing positive can be laid down, because we do not know how long the present system of fuel and machinery will endure. The use of compressed or liquefied gas, or gas made on board ship in boilers of vessels, is a possible development which will save weight and men and simplify boiler arrangement, even with steam boilers and engines as they are now. The nineteenth century was the age of invention. The human mind today is in a state of intense activity, and is developing by its experience during the century just closed. It is fair to presume that it will bring forth new inventions at a much more rapid rate. At this time, however, there is not in sight anything that would give us even a clue as to what we may expect in the way of a new driving power. Liquid air, compressed air, electricity, gas, or any one of a dozen forces may be developed overnight, so to speak, in a manner that will compel the complete remodeling of our enginery both on land and on sea. Naturally this would bring a type of war-vessel entirely different from what we have at present. But a nation, to be abreast of the times, cannot speculate in future developments. It must take advantage of the best existing conditions and work up to them, if it desires to control at sea. So far we have done this admirably in the new American navy.

For a generation past the creation of a battle-ship has been as conventional as the trimming of a hat. The trimming may be varied here and there and the shape slightly altered, but the frame always remains about the same.

The battle-ship has been of slow growth, and there have been few radical changes. Take the *Ironsides* and the *Monitor* and form a composite of the two on steel brought up to the time of the *Inflexible* in armor and gun and you will be surprised to note the similarity. Yet the two types were twenty years apart. The *Inflexible*, barring modern guns and armor distribution, does not differ greatly from the battle-ship of the present.

Hence it is in the factors going to make up the battle-ship that we must look for the probable changes that will be made in the vessels themselves. As to these factors, naval opinion, in America at least, is radically divided. Pick out five of the brightest officers of the service and ask them whether a battle-ship should have a high freeboard or only enough for seaworthiness; whether she should have turrets at all or only barbettes; whether speed or armament is more important—and it is quite possible that one may get five different opinions. This does not mean that battle-ships are inefficient. They are all good, and the merits of particular factors must be proved in the supreme test of battle. No nation can have too many battle-ships if it aspires to world power.

It has been asserted by eminent constructors that we are approaching an era where armor will be subordinated; that the battle-ship of the future will depend upon speed and quick handling for defensive purposes. Personally, I doubt this very much. I look to see a constant development of armor—an increased rather than a decreased protection. The tendency has been right along to protect more and more, and ulti-

mately, I believe, there will be on a battle-ship no exposed parts where men are stationed. Those who suggested the sacrifice of armor in the interest of speed forgot that the first duty of a battle-ship is not to insure her own safety, but to destroy her opponent. She is essentially a fighting machine.

Battle-ships are like prize-fighters—they go into the ring to fight to a finish, and realize that they must be prepared to take many good blows in return for those that they deal if they want victory. Armor being a measure of endurance, the more a ship carries the better able she is to take blows and the better able to administer punishment at short range—the most effective range. The armor and the gun have so far kept pace with one another very well. The plate can be made thick enough to resist any gun, but today such plate is too heavy to carry; so the gun is perhaps ahead.

From the time that explosive shells first came into use armor became imperative. In the days of solid shot it made no particular difference whether a vessel was pierced or not, unless at the water-line. The shot seldom hit any one inside, and the holes made in the vessel were plugged up with comparative ease. Even chain-shot was not fatal to a sturdy vessel, nor impaired seriously her fighting qualities, but a shell carrying a high explosive is different. If one of these pierces a vessel it practically means destruction to all in the neighborhood where the shell strikes, as well as the danger of fire. Therefore, it is necessary to take protective measures that will explode these shells on the outside, and such protective measures are found only in armor, and even increased armor. If there should come a time when there is discovered a projectile that nothing can resist, or that is so powerful that protection against it would involve armor of such thickness as to make a battle-ship an inert mass, then we may expect to turn from armor and depend upon an overwhelming battery, but at present nothing of the kind is in sight.

However, we are only at the threshold in the matter of explosives. There is certain to come more rapid development along these lines. Also, we may confidently look for a striking advance in the matter of propulsive power to regulate the discharge of shells. Smokeless powder has marked an important step, and is now at a high state of efficiency.

It has enabled us to reach a point where we have reasonable control over our projectiles. As investigation progresses we will be able to control this force absolutely. In discussing smokeless powder it is a common error to attribute its value chiefly to its smokeless quality. This is merely an incidental value, except for riflemen; the main value is that in smokeless powder we secure perfect combustion. We are relieved of the necessity of carrying around a great bulk of matter, of which a large percentage is useless, serving merely to darken the atmosphere. The smoke seen in common powder is that part of the substance which remains unconsumed, and is therefore useless. The smoke is made of particles of certain unconsumed ingredients of the powder that float in the air. The idea in powder is to have a substance that shall have powerful propulsive effect at a very low degree of heat.

It is the heat that plays havoc at present with our guns, so that the life of a gun is perhaps seventy-five discharges. At the end of that time the interior of the gun-barrel is all torn and seamed and the weapon is useless. A new form of gun in which practically all the energy of the charge is imparted to the projectile is the ideal after which all inventors are striving at present. Even in the most advanced types much energy is lost. An increased range in our guns is made difficult by the fact that we are handicapped by certain mechanical difficulties that limit the length. When a gun is too long it is impossible to prevent its stretching under the impact of the exploding charge, thereby lessening the effectiveness of aim. This may be overcome by powerful trussing, so that the gun-barrel will be perfectly supported and held rigid, but even then there is a chance of disturbance that will interfere materially with the aim; consequently guns cannot be lengthened indefinitely nor the range indefinitely increased.

In the matter of explosives a good indication of what may be expected in the future are the "thunderbolts," as the Spaniards called them, hurled by the *Vesuvius* against the Cuban fortifications. So far no great range is possible in discharging projectiles of this class. The problem of giving a sufficiently strong impact to insure long flight without exploding the material with which the shell is loaded has not been perfectly met.

But progress along that line is rapid, and in the next war we may be reasonably certain that high explosives will be thrown from powerful guns at long range. Various suggestions have been made that noxious gases may be used in the future for some forms of shells. Humanity will probably not admit the employment of such forms of offensive warfare, but I certainly believe that some form of gas which produces insensibility will be developed as the air-ship comes into use, and perhaps before.

I have no doubt that soon electric influences will be projected and that the metal work of an enemy's guns may be able to transmit shocks to those serving them. The most important factor we have at present to influence the future navy is the submarine boat. It is a peculiarity of this new addition to our fighting force that its influences will be outside itself. By that I mean, that so far as the submarine boat is concerned, it is at the very outset a practically perfect craft. Such changes as will be brought about by its enrolment in the navy will be in the conditions to which it is opposed.

I was challenged some time ago when I said that the submarine boat was less of an experimental vessel than the battle-ship. It seemed an unreasonable proposition to those who had not investigated it, in view of the fact that battle-ships have been afloat for centuries, while a submarine boat has not yet seen its first engagement.

We know that the submarine boat is practically a perfect type of its class, because of the limitations of the field. The submarine boat must be able to go at a fair speed above and below the water. It must dive successfully, and be capable of going in a straight line at a desired depth, and when it fires its torpedo under water it must not lose its longitudinal stability. This is all that has yet been asked of it. The type of submarine boat which we have—the *Holland*—does all these things. Therefore, we are perfectly safe in saying that, unlike battle-ships, the opportunities for extension or development are more limited and less likely to be made.

The problem we are confronting now is to find something that will give us protection against the submarine. At present we have nothing. The only measure that an enemy menaced by one of these boats can take is flight, and battle-ships are not built to run

away. Therefore, some of the greatest minds of the day are wrestling with the problem of finding something with which to combat this new form of offense. It has been suggested in some quarters that the bottom of war vessels be heavily armored, but this proposition has met with no favor. It would mean an additional loading down of our ships, which are already carrying as much armor as weight can be spared for. Experts are not wont to view favorably any device that will retard the speed or further cumber our fighting machines.

But whatever the influence of the submarine, I doubt that it will change materially the general type of the battle-ship. There may be deeper double bottoms, more bulkheads and a general increase of honeycomb structure, but the exterior shape will, after all, remain about the same.

One thing certain is that as naval equipment advances there will be a concurrent advance in the relative cost. This is shown conclusively by experience in the past. The expense of firing a hundred rounds from the 13-inch guns of the battle-ship *Massachusetts* in ammunition alone would exceed the entire cost of the old *Constitution* battery in 1812, with ammunition enough thrown in to fight all her batteries. Each one of the 13-inch turrets of the *Massachusetts*, with its two guns and all its actuating gear, costs more money, so far as construction is concerned, than the cost of the old *Constitution* entire, from the time her keel was laid until she bombarded the bashaw's castle at Tripoli. The cost of the whole battery of the *Massachusetts*, including the armor used as gun protection, would have built, armed and equipped ready for battle two 120-gun three-deckers like the old *Pennsylvania*; the cost of the side armor alone of the *Massachusetts* would have built and put in motion the *Hornet* and *Wasp* of our little navy of 1812; and the cost of the *Massachusetts*' machinery would have provided sailing power for our whole naval force at that time.

But while the first cost of the fighting ship is large, it represents a very low rate of national insurance. By a vigorous stand wars are prevented. It is almost impossible to estimate what a war costs in the loss of life, in the destruction of public structures, closing up of channels, cutting of cables, diversions of trade and other losses. Of course, the idea

that the cost of the thing to be desired is not to be counted is all wrong, as nothing should be bought unless it is clearly worth what is paid for it. England, with the most powerful navy in the world, is adding to it constantly, and while we need no such establishment as England, when we see almost every maritime nation adding armored vessels to its navy, a nation as rich as the United States cannot say that it is not able to do likewise. It is an insurance against material loss, as well as against loss of national prestige, and the best guarantee of peace.

The development of our new colonial policy will greatly influence the navy of the United States, in regard to both numbers and types. In this swift-moving age, subjugation and even assimilation of new ideas of government can be accomplished in years instead of

decades and generations as formerly; hence our colonial policy is sure to be of much quicker growth than has been that of other nations, where the government, being less responsive to the wishes of the people, can carry on abuses and mistakes in a way that our people will not tolerate.

We have entered into active competition for the world's markets, and we have to face a severe commercial rivalry with other nations. This condition enormously increases the chances of war. Its bearing will be direct and specific in developing both the type and the character of the navy. The ocean is for us now no longer a mere geographical division, but a connecting highway, the control of which means world-wide power and boundless wealth. The navies of the twentieth century will write its history.

A TOWN MADE IDLE BY A TRUST

HOW NEW HARTFORD, CONNECTICUT, SEEMED TO BE
BLIGHTED WHEN A TRUST MOVED ITS COTTON MILLS
SOUTH—IN A FEW DAYS THE OPERATIVES WERE AT
WORK AGAIN ELSEWHERE—THE TOWN RECOVERING

BY

FRANKLIN MATTHEWS

ONE of the great evils in the operation of industrial combinations, from the point of view of the wage-earner, is their power to scatter a community to the four winds or starve its people into submission to the demands of capital. It has been pointed out that perhaps one man or a small group of men, by the mere act of signing an order to close up a plant, could exercise a power of life or death over thousands of human beings. Something akin to this happened in the beautiful New England village of New Hartford, Connecticut, last August and September, when the comparatively large cotton duck mills of the Greenwoods Company of that place were ordered closed by the so-called Cotton Duck Trust, the Mount Vernon-Woodberry Cotton Duck Corporation. Nearly one thousand persons of the 2,300 in the place were compelled to leave the town. Nearly a hundred houses were boarded up and rents were offered free

to the mill hands who remained, for some men who had worked thirty, forty or even fifty years in the plant were too old to get work elsewhere.

With the population cut almost in half, the merchants of the place thought they saw ruin before them. The pay-roll of the mills had been more than \$175,000 a year, and with the spending of this money stopped it seemed as if the community must die. The income of the churches was cut down, a large part of the foreign congregation of the Catholic Church disappearing as if swept out by a cyclone. There were fewer children for the schools. The value of real estate declined, and those who had put their savings into homes found themselves unable to get rid of them. There were too many merchants, too many physicians, too many barbers—and, one and all, they sat down to see who would go away or go to the wall first. Gloomy forebodings as to the increase of the poor fund

of the town arose; the bells of the mills ceased to ring; the town band, that gave a public concert every week, ceased to play; a water-power estimated as worth from \$200,000 to \$300,000 lay idle; the machinery of the mills was being shipped to the trust's mills in Alabama; only the four walls of three large buildings remained. The town was dead; the heavy hand of a trust seemed to have crushed it.

And why? Because it could make goods cheaper in the South. The residents of New Hartford said the days of evil began when the owners of the mills sold out to the trust. Reproaches were cast at former stockholders who live in New Hartford, particularly at the descendants of the founder of the mills. Then a clamor arose in the country. It was reported that the mills were closed because the laws of Connecticut would not permit child labor under fourteen years of age. In the South child labor, it was declared, was unlimited in supply. Editors from one end of the country to the other attacked the managers of the company, and those who fear trusts as a menace and see in them the force that can make white slaves of all humanity pointed to the New Hartford example and prophesied the downfall of New England's cotton industry.

Nearly three months have gone by; men have become calmer in the foothills of the Berkshires around New Hartford; and the actual results of the trust's action are visible. It is true that the town has been depleted of its people by nearly one-half. But it is also true that not one person who left New Hartford to work elsewhere failed to get a job. It is also true that in most cases the mill operatives bettered themselves. There has not been one dollar added to the poor fund of the town. Only two small stores in the place have closed. The trade of the merchants has fallen off only about one-third. One school has been closed, but it was a small affair of less than fifty pupils. The income of the Congregational Church has fallen off from ten to fifteen per cent.; that of the Catholic Church probably nearly fifty per cent., because one of its congregations was wiped out. The savings bank deposits, however, have increased in the town, and the number of new accounts opened has shown a greater percentage of increase than last year. The post-office receipts have fallen off to such an extent

that next year it will probably be a fourth-class office or the postmaster's salary will be cut \$200 or \$300.

There has been no case of actual distress as a result of the closing of the mills. Three grades of people have incurred loss: the merchants who had large stocks of goods on hand when, without warning, the closing orders came, and who now have had to purchase another grade of goods; the owners of real estate, particularly those who worked in the mills and now cannot sell; and the farmers who brought in large quantities of garden truck for sale.

On the other hand, newcomers to the surrounding hills are giving new life to the place. One man, Frank Jones, who lived there as a boy, has recently bought an entire mountain at the town's edge and is building a large country estate there. A dozen or more country houses of considerable pretense are scattered about, among them being the delightful and superbly kept home of Clara Louise Kellogg-Strakosch. The hills are as picturesque as the Berkshires and there are more streams in them. The water is declared to be purer, as shown by analysis, than in any other part of the State. The town has shaken itself together and finds that it is not so badly off as it feared.

It is altogether improbable that a waterfall of 1,500 horse-power is going to waste, and although there is no immediate prospect of a new industry coming to the town, some industry will come in time. It will not be a cotton industry, but Connecticut is full of others.

These New Hartford mills were closed simply because they were losing money. The president of the so-called trust has given me his personal word that the mills would not have been shut down if they had "brought back a new dollar for every one that had been expended." For the last three or four years they have brought back only from ninety to ninety-five cents on the dollar. The industry was moved to the trust's mills at Tallassee, Alabama, because it could be made to pay there. It didn't pay in New Hartford for three reasons: the machinery was antiquated; the freight rates on the 8,000 or more bales of cotton used in the mills every year were too heavy a drain, compared to the freight rates to the mills built almost next to the cottonfields in the South; adult labor, not

child labor (there seems to be considerable misapprehension about this child labor of the South), was about fifty per cent. cheaper, to use round numbers, in the South than in the North.

If the trust had not taken these mills they would have been closed several years ago, because they did not pay. The machinery was moved South precisely for the same reason that other cotton mills have been moved thither—to make money. Factory Inspector George L. McLean, of Connecticut, has prepared this table of the average yearly wages for cotton mills in the country: Massachusetts, \$351.06; Rhode Island, \$334.26; Connecticut, \$332.98; Georgia, \$194.82; Alabama, \$177.89; North Carolina, \$169.33; South Carolina, \$167.77. Those figures tell why the New Hartford mills, using about 20,000 spindles out of a total of 7,000,000 in the industry, were moved.

This is what happened when the orders came to close the mills: Agents arrived at once from other mills to give the operatives work. The closing order came on a Friday. By Monday 200 of the 750 hands employed in the mills were on their way to other places, where they had already been hired. Before the managers of the trust could reach New Hartford to offer to take their operatives to Baltimore where excellent labor laws prevail, the plant had been cleaned out by agents of other places. Mr. James E. Hooper, the president of the trust, informs me that it was the intention of the company to take care of every employee who would be willing to go, not to the far South, where cheap labor prevails, but to Maryland, where wages are as high as in New England. But the operatives found work immediately in Rhode Island; Danielson, Connecticut; Torrington, Connecticut; North Adams, Massachusetts, and smaller towns near by. Their traveling and household moving expenses were paid for them. One agent brought a special car three times to New Hartford and filled it each time. The rush for the new work was such that one day the train employees had to sweep off the train people hanging to the cars. They even went in freight cars. The great point is that not one capable of working failed to get work, and that the trust would have cared for its employees if it had had a chance. The general prosperity of the country may have brought this condition about, but

nevertheless it is true that no one actually suffered more than nominal loss.

Of the 750 employees in the mills, fully 450 were Hungarians. Many of them worked for as low as \$5 a week—starvation wages, it would seem. And yet they saved money. One man the day before he left town took out eight \$100 money orders, representing his savings, to be sent to the old country. Half a dozen others took out from four to six money orders for \$100 each. The chief merchant of the town, who forwarded money by check to a certain New York banking firm for transmission to the old country—there is no bank to do this work in the town—showed me dozens upon dozens of vouchers representing the savings of these people. Scores were for sums more than \$100. One was for \$1,300. One man who had worked seven years in the mills at \$5 a week had \$850 as his savings. It went to the old country. One woman who had worked for \$4 a week took out a money order for \$100, and told the post-office people that it represented her savings for just one year. These low wages were paid because other cotton mills paid the same wages; because such cheap labor could be secured for the industry.

These Hungarians lived in comfortable houses owned by the company. The highest rent was about \$100 a year—for houses occupied by foremen. In some of the dwellings—which were quite comfortable—the rent was as low as \$1.50 a month. When the mill ran on half time no rent was charged. The company raised large quantities of potatoes and wood on its lands, and often these were to be had free by the employees.

The Hungarians lived largely on barley, which the leading merchant of the town bought by the ton. They did not keep boarders in the ordinary sense. Those who rented cottages sublet their rooms at so much for a bed, so much for a trunk, and so much for the cooking rights of the stove. Not one of them had a bank account. They saved money in stockings; they lived on soup three times a day and seven days of the week; they saved money and they counted themselves prosperous.

All these are gone. Many of the French and most of the Americans remain. Only about 150 children, all above fourteen, worked in the mills, and that is why their closing has affected the schools so little.

CONDUCTING A RUSSIAN NEWSPAPER

FOR PERMISSION TO PUBLISH A NEWSPAPER A PETITIONER MAY WAIT
TEN YEARS—THE LIMITATIONS PLACED ON CENSORED PERIODICALS
—THE DANGERS RUN BY PUBLICATIONS THAT ARE "CENSOR-FREE"

BY

WOLF VON SCHIERBRAND

WE often read about the censorship of the Russian press. How does it work in everyday practice? How does a Russian editor conduct his paper under it? Outside of Turkey there is no other country where the public intellect as expressed in newspapers, periodicals and books or pamphlets is fettered as in Russia. This more than anything else makes amalgamation with Russia inexpressibly hard for the Finns, bred as they are to untrammelled assertion of their thoughts and convictions; and perhaps no other form of Russian official life gives a clearer insight into the difference between Russia and the rest of the world.

The greatest and most multiform restrictions are those imposed upon the daily press. For the dominating idea of Russian censorship is to guard the mind of the whole nation against intellectual influences inimical to prevailing political and social conditions—against everything which Western notions deem progressive, in fact, to change of any kind. That the influence of the daily press, exerted incessantly and upon broad strata of society, is most to be dreaded from this point of view cannot be denied. A whole chain of obstacles and safeguards therefore tightly encompasses the Russian press.

First, to issue a periodical organ, the Government concession must be obtained. This requires time and money, and even with these is uncertain. First the sum of 5,000 roubles (about \$2,800) must be deposited with the Government when the application is made, this money remaining permanently in its hands. Then at best comes a long, long wait, generally several years. But that by no means insures success, even if assiduous and never-tiring efforts are used to fortify the application. A concession cannot be insisted upon as a right, nor is it subject to certain specific and inflexible conditions. Neither

the applicant's admitted eminent literary qualifications and repute, nor his irreproachable political belief and conduct, nor his high and influential social position, suffices in itself to obtain one. The Chief of the High Press Administration and the Minister of the Interior can act entirely as they please, and give their final answer in either one or ten years. Sometimes not a single concession is accorded for a number of years, and then there follows a plethora. Curious stipulations are often made. Thus, the recently displaced chief of the bureau stated publicly that he would confer concessions exclusively upon petitioners known personally and favorably to him, and he adhered to the rule.

Every newspaper must have a "responsible" editor and publisher, specially confirmed by the High Press Administration. Thus they become *quasi* Government officials. The "responsible" editor can lose his qualification only by becoming guilty of specific acts. The owner or publisher of the paper cannot discharge him, although he can diminish or take away his salary. The only remedy is then for the paper to ask the bureau to sanction a change—which may or may not be done. Only in case of the "responsible" editor's leaving Russia or becoming guilty of some distinct crime will he lose his place and title. The publishing rights can likewise be transferred only with the previous permission of the bureau, which is very difficult to get. Religious faith is important. Jews are excluded under all circumstances.

If a paper or periodical has its concession annulled, both editors and publishers lose forever the right of issuing or writing for any similar publication.

Concessions are always granted only after the approval of a programme closely outlined by the petitioner, to be adhered to during the lifetime of the publication. The

High Press Administration curtails in advance this programme as much as possible. Hence Russia has many publications of oddly circumscribed scope. Many of them—particularly in the provinces and in the rural regions—have only the concession to publish advertisements, while others must not publish political articles or telegrams, and nearly all of them are not allowed to report the public military trials. If the subscription price of a newspaper does not exceed six roubles a year, it must not engage in any discussion of the existing laws, nor in what is called "high politics." On the other hand, if a publication fails to make a regular feature of any topics included in its scheduled programme, the programme is then correspondingly cut down. In case of suspension, no matter from what cause, the permit of publication ceases within a year.

A concession to publish a paper or periodical is given only to persons toward whom either the High Press Administration or the Minister of the Interior feels well disposed. A real journalist is hardly ever made "responsible" editor. The authorities do not feel confidence enough in him. It is nearly always Government officials, retired army officers and similarly situated persons who receive the sanction of the authorities. The late Chief of the Bureau, Ssolovieff, went further. He forced upon the publishers his personal friends as "responsible" editors.

Despite all these precautions, most new concessions get into the hands of writers more or less identified with the progressive movement in the empire; for the publications of the reactionary, autocratic, old-fashioned type cannot exist—if one excepts a bare few—without large Government subsidies. The educated classes in Russia, high and low, simply refuse to read and support them, and this less from reasons of political and social conviction than because these old-fashioned sheets are too dull, since they have to exclude nearly all sensational and entertaining news matter. There is also another element, omnipresent in the Czar's domains—official corruption, which accounts for the transfer of concessions granted to men of reactionary tendencies to men of different leanings. A glaring case is that of M. Ssasonoff, formerly the official publisher of *Rossya*, an influential daily recently suppressed. He sold his concession for an immense sum. M.

Golovinsky sold his concession for the *Ssvernny Courier* to Prince Bariatsky for 50,000 roubles in cash and other emoluments.

If these precautionary measures have not been quite successful, their baleful effects are nevertheless very perceptible. It is due to them that M. Ssuvorine has maintained the practically monopolistic position of the *Novoe Vremya*, a paper which is a very chameleon of political opinion—now Governmental, again moderately liberal, next jingoistic or reactionary, just as the weather vane of political current in Russia indicates, and which precisely by these methods has forged to the head of Russian newspapers. For a short time it looked as if the *Rossya* would dispute its rank, but its editor-in-chief one day recklessly began to attack the Imperial family in the guise of ironical praise. He and his publisher had the highest connections at court and in the army, as well as in Government circles, and on this account Prince Chakhovskoi had pardoned many transgressions. But this last escapade was not forgiven. It precipitated the ruin and permanent suppression of the *Rossya*, and landed M. Amfiteatoff in Siberia. It is, therefore, opportunism turned into a fine art which alone will enable owners of and writers for Russian papers to avoid, at least for a time, the fate of being ruled out of existence, though in the long run even the most accomplished artist cannot escape that fate.

According to the experience of the last twenty years in Russian journalism, if a paper succeeds it will be suppressed; if it is not suppressed it must forego success. The Russian papers are forever oscillating between these two goals. Even the blackest, dyed-in-the-wool reactionary sheet realizes from time to time that it must make a bid for popular favor by printing something it ought not to print and thereby risking or actually incurring penalties, even suppression, simply to increase again its dwindling subscription list. Even the most liberal sheets must at times spread the cloak of reactionism over their columns in order to save themselves from annihilation.

There are two classes of newspapers in Russia—the so-called "censor-free" and the "censored." The "censor-free" paper is, of course, a misnomer, for it is not only subject to censorship, but is also forbidden from printing whole departments of legitimate

news, and many specific items. But, after all, it enjoys more latitude than the "censored" papers. The latter, which print only news, comment, editorials, literary matter of every description, criticism, etc., approved by the censor, as testified by his signature on every proof slip, run, of course, no danger. But such censored papers have neither influence nor a large number of readers. Financially they lead a very precarious existence, and are never heard of outside their immediate neighborhood.

It is the "censor-free" papers that alone represent the Russian press, taking that word in its Western sense, though they are subject to preventive censorship and delay in just those features of news which in other countries are hastened, and which form, in their greater wealth of details and in their speedier receipt, the chief difference between the less enterprising and successful newspaper and its more enterprising and successful rival. This list comprises telegrams, reports of the sessions of city councils, *zemstvos*, and other important local news, all court news, the appearance of cholera and other epidemics, and so on. Many departments of news must only be given after official information (if obtainable, else not at all), such as news of riots, revolutions, movements of the army, all Government measures and appointments and dismissals. Some kinds of news must never be touched on: for instance, suicides, internal conditions of Russian schools and universities, strikes, lockouts, and all other labor news, even including editorials on labor statistics, the duration of working hours and wage scales. Political murders, all plots of a political nature, dissertations on anarchism, socialism (even in other countries), and any other news "calculated to disturb the peace of mind of the Russian subject," as the Government decree has it, are also strictly tabooed. Religious news, including such cases as Tolstoi's, is, of course, excluded. Very often circulars are issued prohibiting the press from mentioning certain events, such as sensational trials, and in many cases extending this prohibition to matters trivial or worse. One of these recent circulars forbade "further mention of the wives of the Sultan," for instance. Another time it was forbidden to discuss a theatrical scandal in connection with a new drama, called "The Smugglers,"

and still another time the papers were interdicted from chronicling the boycotting of the *Novoe Vremya* because of that paper's attitude on the university students' riots. For many years it was not allowed to speak of the sessions of the National Economic Society. Mention of particular newspaper articles, and polemics engendered thereby, is frequently proscribed.

This, then, is what is meant in Russia by the term "censor-free." Yet, with all these difficulties, most papers prefer this limited supervision, with all its attendant dangers and penalties, to the complete serfdom of the "censored" press. But the number of such "censor-free" papers is very limited, for the Government does not issue many concessions, even in place of those annulled. In the main it is only in St. Petersburg that such concessions are granted. In Moscow, even, no concessions for "censor-free" papers are any longer accorded. And it took a periodical of considerable ability in St. Petersburg several years to obtain permission to change from a "censored" into a "censor-free" publication.

The "warning" is one of the most formidable censoring weapons. According to the Imperial ukase, it requires three warnings before a paper or periodical can be entirely squelched. There are other weapons, of course, such as "temporary prohibition," "disallowance of the street sales of papers," and "interdiction to receive and publish advertisements." All these modes of punishment are, of course, severe enough, and if insisted upon long enough will sometimes ruin or embarrass a publication. But the "warning" is the most dreaded of all, next to complete suppression. Such "warnings" are given entirely according to the whim of the Minister of the Interior or of the Chief of the High Press Administration, sometimes for ludicrously small contraventions of the press regulations.

The worst punishment, suppression, is now meted out by the so-called "conference of ministers," composed of the Chief Procurator of the Holy Synod, the Minister of the Interior, the Minister of Education, and the Minister of Justice.

Censorship in Russia certainly retards progress. But will it stop it eventually? Signs are not lacking that it will not.

OUR INDUSTRIAL INVASION OF CANADA

THE MARVELOUS RESOURCES OF BRITISH NORTH AMERICA AND HOW MEN FROM THE UNITED STATES ARE DEVELOPING THEM—A STUDY OF AMERICAN INFLUENCE MADE DURING A JOURNEY ACROSS THE CONTINENT

BY

ROBERT H. MONTGOMERY

C ECIL RHODES once passed his hand across the map of Africa and said, "I want to see this all red"—or, in other words, all British. A like American expansionist who hoped to see the North American continent "all red"—or controlled by the United States—could readily fancy, in taking such a trip as I recently took from Sydney, Nova Scotia, to Vancouver, that a reddish tinge covers territory far to the north of our northern political limits; for the industrial boundary of the United States runs in a waving line across the continent well within Canadian territory.

The story begins at the Atlantic threshold of Canada and proceeds to the Pacific Ocean—with American achievements all the way. And how did it begin? What, for example, called Mr. Henry M. Whitney, of Boston, from his finished task of giving Boston a rapid transit system, to a bleak and obscure coast village in Nova Scotia, and how did he manage great steel plants there? And what called other men across the boundary line? This is what I set out last June to discover.

"Why, if we Canadians had asked the bankers for a third of the money he secured and expended at Sydney," said a Montreal manufacturer, telling me of Mr. Whitney's methods, "they would have laughed at us." Yet Mr. Whitney had merely been acute enough to perceive what I found at Sydney, when I began my investigations, to be a unique opportunity and to explain it lucidly to other financiers. In the civilized world there is no other tide-water district where iron ore, limestone and coal are found so close together, so good and so easily obtainable. Coal, Mr. Whitney found, could be mined and put on shipboard at less than a dollar a ton. Limestone and iron ore were handy. Accordingly he set to work. As mining lands

in Canada are merely leased to operators who pay such high royalties that one-third of the Government revenue of Nova Scotia comes from the mines alone, it was necessary first to give strong guarantees to pay large royalties. He gave them. Thus political objections were overcome. Next the various Sydney coal companies were consolidated into the Dominion Coal Company and affiliated with the Dominion Iron and Steel Company. Limestone quarries were secured, and at Great Belle Island immense deposits yielding fifty-three per cent. of iron were obtained, lying so close to the water's edge that the cakes of ore were shoveled directly into the holds of ships. Cargoes of iron ore are delivered at Sydney from the Wabana mines for less than \$1.25 a ton. Stephen Jeans, an English authority, computes the cost of manufacturing hematite iron at the greatest steel centres of the world as follows: West Cumberland, England, \$15.65 a ton; Westphalia, Germany, \$13.50 a ton; Pittsburg, \$9.57 a ton. At Sydney the cost is \$7.45 a ton—without deducting the government bonus of \$2.70 on each ton of native ore and \$1.80 a ton for foreign ore manufactured in Canada, which would lower the net cost to \$5.65 or \$4.75 a ton according to the source of the ore. This was Mr. Whitney's discovery in Canada. When the works at Sydney are completed, they will turn out half a million tons of steel a year, and already plans are on foot to begin ship-building there.

Mr. Whitney has disposed of his control of the Dominion Iron and Steel Company, but it was his genius that created this typically American industry beyond our borders.

Sydney is 1,200 miles nearer European ports than Baltimore, the port nearest Pittsburg; 2,300 miles nearer Liverpool than Pensacola, the port nearest the Alabama iron district; and

through the fact, not usually borne in mind, that South America lies far to the east of the United States, 600 miles nearer Rio de Janeiro and Buenos Ayres than New Orleans and Mobile. It is also 900 miles nearer Cape Town than these Gulf ports are. In fact, it may not inaptly be termed "The nearest port to anywhere." Its deep reef-free harbor, on the shore of which stands the steel plant, is untroubled by fog and is ice-locked only twenty days a year; and furthermore, it is supplemented by Louisburg Harbor, forty miles south, which is never ice-bound. Between the two is the Marconi wireless telegraph station. Already fast developing, what shall this region of great natural wealth and easy communication with the world become in the future? And yet it might still be slumbering undeveloped if it had not been that an American industrial pioneer had seen there an opportunity.

With this thought in mind, I journeyed westward up the great Laurentian Valley. Here, running to waste, was the greatest natural advantage next to abundance of raw material and access to markets—namely, power. Quebec and Ontario possess in their vast systems of lakes and streams the largest reservoir of hydraulic energy in the world. And already I found American industries making a beginning in those two provinces. Within fifty miles of Ottawa, energy of nearly a million horse-power is susceptible of cheap transmission to the city, though only one-sixteenth of that amount is now used.

The standing timber of Canada equals that of the continent of Europe and is nearly double that of the United States. I asked an American manufacturer of wood-pulp what the resources of his business are.

"About half of that," he replied, sweeping his hand across the map of Canada. Forty per cent. would be more nearly accurate.

The timber belt stretches from the Atlantic coast to the plains beyond the Great Lakes, and from the slopes of the Rocky Mountains to the Pacific Ocean; while on the north, beyond the "Height of Land," is a vast area of timber sweeping across the continent from Labrador to Alaska, 700 miles in width and 4,000 in length. Of these forests no small proportion is spruce, white and black, the preferred material for wood-pulp, used for paper and other commodities ranging from car-wheels and water-buckets to buttons.

A single district, that of Lake St. John, north of Quebec, bears spruce equal to the entire forest area of Norway, and has 700,000 horse-power in its streams waiting to be harnessed.

Throughout this territory the American of characteristic enterprise and ability is ubiquitous. Millions of American dollars are being expended yearly on huge pulp mills equipped with the best American machinery, and large towns are fast springing up around the once lonely cataracts in this vast hinterland. Apart from numerous small concerns and new ventures still under construction, I was able to visit immense pulp mills at Sturgeon Falls, at Sault Sainte Marie and at Grand Mère on the St. Maurice; corporations whose timber limits aggregate many thousand square miles, and handle many millions of logs per annum, producing pulp which, from its high quality, is driving the Scandinavian article from the markets of Europe, is supplying many mills in the United States, and is largely used in Australasia, India and Japan.

These American investors are determined to make their position in Canada that of sovereignty in the paper-using world. Twenty years ago wood-pulp went into the manufacture of but eight per cent. of ordinary paper. Today more than eighty per cent. of such paper is made with wood-pulp as the chief ingredient. The pulp has become one of the prime necessities of civilized peoples. The supply in the United States is dwindling as its forests disappear, and that of Europe also, while the demand continually increases. Attention is, therefore, now transferred from exhausted districts to the new Canadian field, and a flow of English, French and Belgian capital has set in which promises phenomenal development. Americans, it need hardly be said, are still foremost in expansion, as they were pioneers in the inception of the industry. Ezra B. Eddy, of Hull, near Ottawa, who operates the largest manufactory of pulp products and matches under the British flag; General Russell A. Alger, of Michigan, who initiated the development of the Laurentide Pulp Mills at Grand Mère; Francis Clergue, of Maine, whose pulp processes at the Canadian "Soo" are the world's criterion of excellence; the Clarks, of New York, pioneers on the far northern shore of the Gulf of St. Lawrence; the late Ex-Senator Warner Miller, of New York, one of the organizers of the International Company, in the St.

Maurice region—led the van of the American invasion. And largely, too, upon American machinery, engineers and employees are European investors in the region depending for success.

Crossing the gardenlike peninsula of Ontario, I proceeded to the upper lake region, and that portion of its north shore known as Algoma or "New Ontario." Here is demonstration of American discovery and conquest even more recently achieved than that in eastern Canada. On the Canadian shore of the "Soo," by the original purchase of a small power canal, Mr. Francis Clergue, of Maine, representing a Philadelphia syndicate, has developed in a few years, and by natural, conservative progress, the "Consolidated Lake Superior Company," a corporation including water-works as well as the original canal, light and power plants, pulp mills, chemical and mechanical, railroads, telegraph and steamship lines, iron mining, smelting and blooming, and electro-chemical works, with all their subsidiary industries. Mr. Clergue was, as he says himself, "fortunate enough to come to Sault Sainte Marie in 1894, and sensible enough to stay there." His original investment was modest—the acquisition of a 5,000 horse-power canal and its enlargement to fourfold that capacity. The company was then prepared to lease power to manufacturers, but there was apparently no one sufficiently far-sighted to seize the opportunity. The power company, tired of waiting, erected a pulp-mill and went into manufacturing on its own account. The story, as Mr. Clergue tells it, of how the need of sulphur for the process of chemical pulp-making led to scientific investigation by his experts, resulting in a performance of the "impossible" feat of roasting sulphur from the Sudbury nickel, near at hand, and how the resulting "matte" was discovered to be a superior quality of ferro-nickel, eagerly contracted for by the late Herr Krupp of Essen, is curious enough. Press him a little further and learn the stranger sequel of how the excess of nickel in the "matte" beyond contract requirements led to a search for iron ore to qualify it, and of the accidental discovery of the rich Michipicoten mines. An ignorant prospector, thinking he had found gold, brought his specimens to Mr. Clergue to be assayed. On learning that his treasure was only iron, he was so disgusted

as to sell the claim for \$500. Later, when it was discovered how rich the mines are, Mr. Clergue made a life settlement of \$75 a month upon the lucky prospector, who thus found his gold mine after all. The development of Michipicoten required the construction of railroads and the purchase of a fleet of steamers, and these in turn led to other developments; but they cannot be related here, though the story would read like a romance.

One thing failed Mr. Clergue: coal is not available at Sault Sainte Marie unless brought from Pennsylvania; but in place of coke for the blast furnaces, charcoal is made by a new process and can be used economically; charcoal cannot be afforded at rival plants except for the manufacture of the finest crucible steel. The thousands of acres of forests comprising the company's timber limits supply an abundance of hard wood for the charcoal, and the utilization of the by-products will necessitate new structures, extending the already large territory covered by the company's picturesque buildings of red stone. Every dollar of the vast expenditure for the construction and equipment of these works and transport lines came from the pockets of the syndicate. There is not a mortgage nor bond of the concern in existence, and the funds at Mr. Clergue's command seem unlimited. He occupies, with his brother, picturesque bachelor quarters in the remodeled block-house which once guarded the Hudson Bay Company's post, around the premises of which, as guardians, two or three large bears are usually tethered. His method is Napoleonic; his outlook is no less remarkable than his appetite for detail.

Educated as a lawyer and trained as a banker, he is also a mechanic and an engineer. When not inventing an improvement in a machine, he may be dreaming before his fire of a few hundred miles more of railway; both will be executed. He required an apparatus for drying pulp to save freightage on fifty per cent. of useless moisture; there was no such machine. He drew plans for it, but the makers of pulp machinery declined to build it, declaring the idea to be erroneous and the plan impossible. He built the machine in his own shops and made it work. The saving over the old method is represented by \$1,000 per day.

Many of Mr. Clergue's schemes have seemed

impossible, as did this machine, but eventually they have succeeded and have paid as handsomely. The completion of the Algoma Central Railway, of which Mr. Clergue is manager, from the "Soo" via Michipicoten to Moose Factory on Hudson Bay, will mark the beginning of a new era in North American history; and when, in addition to Canada's already valuable export of fishery products to the United States, the salmon of the great sub-Arctic sea are delivered fresh on the Chicago markets, nine hundred miles due south, as Mr. Clergue promises, it will stand as an achievement in the history of man's struggle to subdue the Northland. This line of railroad will open a country equal in area to one-half the State of New York, and with a soil more fertile and a climate more equable than prevails in many more southerly and already settled portions of the continent. The company is pledged to bring in, and provide farm homes for, 1,000 settlers annually for five years, this in return for the Government grant of 6,400 acres of land per mile of railroad. Mr. Clergue is therefore not only a discoverer but also a colonizer, as well as an industrial czar in what was not long ago a howling wilderness.

I have here touched upon American industrial outposts located in portions of the Dominion widely separated from one another. But bear in mind that in the whole of her vast territory Canada has fewer inhabitants than the State of New York; that the revenue by which the Government is sustained, great public works constructed and the laws efficiently administered is less than the revenue of the City of New York. To a population so widely scattered, means of intercommunication are accordingly of exigent importance. Canada has, as the result of an enormous expenditure, a system of waterways by which sea-going vessels may penetrate almost to the heart of the continent. These were for a time sufficient, but years ago a few public men began the agitation for a policy of railroad construction which was then largely in excess of the country's requirements. The Grand Trunk was the pioneer line, and for many years was alone in the field, increasing its Canadian mileage from two or three hundred miles in 1855 to more than three thousand in 1901. Its history has been checkered, as the English capital most largely interested was slow to realize that a Canadian railroad

cannot be successfully managed from a transatlantic base; but the lesson once learned was taken thoroughly to heart. In 1895 Charles M. Hays, then Vice-President of the Wabash system, was selected as General Manager of the Grand Trunk, and, except for a few months, when he succeeded Collis P. Huntington as President of the Southern Pacific, has occupied that position ever since. Mr. Hays cut away deadwood ruthlessly, and effected a thorough reorganization of the twenty-five lines comprising the Grand Trunk system, putting the whole upon a modern and efficient basis. The great increase in the road's business and prosperity is entirely due to Mr. Hays and the American railroad men he selected as his subordinates. But though the Grand Trunk, for some time, met the requirements of eastern Canada, and the Intercolonial Railway, a national undertaking, connected the Maritime Provinces with Quebec, it was felt that until there was a comprehensive railroad system from ocean to ocean, to bind the incoherent confederation together, Canada could not become a nation. This was the inspiration that American experts crystallized as the Canadian Pacific Railway.

In 1881 the political party in power opened negotiations to construct a transcontinental railroad with the capitalists who eventually completed it. The first task of these builders was to find capable and experienced men to carry out their project. It was then that two American railroad men of mark, William C. Van Horne and Thomas G. Shaughnessy, first became interested in the great enterprise. Sir William Van Horne, before he accepted the management of the Canadian Pacific, had had a varied experience of railroad life. In his fourteenth year he was an office boy in an Illinois railroad station, rising to the posts of telegraph operator and ticket agent, and ascending grade by grade in the employ of various lines in different parts of the Union until he became, in 1880, General Superintendent of the Chicago, Milwaukee & St. Paul Railroad. In the following year he was chosen as General Manager of the projected Canadian line, and given the task of constructing it across the plains and over the mountains to the Pacific Coast. He selected as his right-hand man, Mr., now Sir, Thomas Shaughnessy, who had served with him in Milwaukee and has since succeeded him

in the presidency of the Canadian Pacific. The last rail of the line was laid fifty-four months after the commencement of the road by the company, and in less than one-half the time required by its contract with the Government.

The day came when the first train for the Pacific Coast was scheduled to leave Montreal. On time to the second, it pulled out of the station with as little demonstration as if it had set out daily for years. Ten minutes later a battery of field artillery dawdled up, unlimbered, and prepared to fire a salute when the train should depart. Great was the disgust of the major in command when he learned that the object of his attentions was already some miles on its way west. "Well," said Mr. Van Horne, in humorous reference to the leisurely methods of the rival road, "I guess he thought he was to salute the Grand Trunk!" Sir William Van Horne, knighted by the late Queen Victoria, is accounted the ablest as he is certainly the most versatile man in Canada. He is repeating for Cuba just such a triumph of trunk line railroading as he accomplished for the Dominion. He is a member of a score of boards of manufacturing and banking enterprises, and fills a seat at the councils of McGill University. By way of recreation he gathers canvases by Velasquez or Corot, his love of the masters all the keener because he is himself an artist of talent. His collection of Chinese and Japanese porcelains is one of the best in America; he can stay up, after a hard day's work, till two in the morning transferring to paper the outlines and hues of his jars and vases. He talks admirably, writes well and has a hearty appreciation of the best literature, and naturally Stevenson and Kipling are among his favorites. He is in intelligent sympathy with science. There is nothing mechanical, from the proportions of a chimney to a folding berth for a steamship, that he cannot set forth with pencil and specification. At rare intervals, perhaps during a transcontinental journey, he draws up to the card-table. Then he becomes an object of dread, for never was there such a bluffer before.

Under the successive supervision and management of Van Horne and Shaughnessy the Canadian Pacific has grown to control railroads aggregating 6,874 miles within the Dominion and owns fleets of steamships on the Great Lakes, and on the Pacific Ocean royal

mail liners to China, Japan and Australia. The company is now tendering for the projected fast mail service between Canada and Great Britain. By rail and water it maintains a continuous transcontinental route between Halifax, Nova Scotia, or St. John, New Brunswick, to Victoria, on Vancouver Island, British Columbia, the only single ocean-to-ocean railroad on the North American continent. The original purpose of the Canadian Pacific was political and military; its financial success was purely speculative. There were not wanting men of influence who jibed that it "would never pay for the grease on the car-wheels." Needless to say, its constructors had more confidence, and to one who has traveled by it through the Northwest, of which it is the main artery, it is incredible that men of intelligence could ever have doubted the future of the country or the success of the road. So rapid has been the development of the country through which the Canadian Pacific runs that the Grand Trunk is now preparing to share in the prosperity of the Great West of Canada by extending its line to the Pacific. Nearly 3,000 miles of railway will be built across the continent at an expenditure of from \$75,000,000 to \$100,000,000—another monument to the "forward policy" of Mr. Hay. The joke of Sir William Van Horne in the matter of the battery that arrived too late no longer has point.

The gold fields of western Ontario have just begun to produce gold, but a large amount of development work has been done, and the prospects are that in output these fields will rank with the Rand and the great Comstock lode. Americans are almost entirely responsible for all the work done on the mines in the Rainy River District, as the Ontario gold fields are generally known, and the capital has been drawn from "the States." Many mills are already in operation, though it is hardly ten years since the gold-bearing quartz veins were discovered when the Canadian Pacific line was cut through. Shafts have been sunk in many places chiefly by American compressed air drills bought by American capital and operated in many cases by American miners.

Though these new gold fields are almost on our very borders, little is known to the public in general, but the mining men are thoroughly alive to their importance.



THE FIRST IMPORTATION OF SHETLAND PONIES INTO THE NORTHWEST

Lethbridge, N. W. T., Nov. 22, 1890

During the past autumn Sir Wilfrid Laurier, the Premier of the Dominion, in a speech at Liverpool, said that within two decades Canada would be able to supply the total wheat requirements of Great Britain. One of the most notable features of the decorations in London for the coronation ceremony this past summer was a triumphal arch of cereals at Whitehall bearing the illuminated legend, "Canada the Granary of the Empire." This was a bold bit of advertising, but its boast and Sir Wilfrid's statement have a basis of fact. But Sir Wilfrid did not consider it necessary to add that the development of the "Empire's Granary" was being effected, not by English immigrants or Canadian pioneers, but by farmers from the United States.

There has lately been a steady migration of Western farmers into Canada. It is now generally conceded that the bulk of the wheat-bearing lands of North America lie beyond the international boundary. The western wheat belt of Canada is estimated to equal an area of 400 miles from north to south and 900 miles from east to west. This does not include the cultivable area of Manitoba and

the Northwest Territories. As an example of the vastness of this new cereal Eldorado I will specify one territory, Saskatchewan, one of the most fertile districts in western America, equaling in extent the combined area of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, Delaware and Kentucky. This deep-soiled river valley has at present a population of about 25,000 souls, over a third of whom are Indians.

As I passed through Manitoba, from the Lake of the Woods to Brandon, and still westward to Regina—through one vast wheat-field awaiting the reaper—it was an effort to realize that but a few years ago the entire country was deemed a worthless wilderness, unfit for any purpose except the production of furs for the Hudson Bay Company. This impression was due partly to ignorance, but also, to a considerable extent, to the deliberate misrepresentations of the servants of the company, who wished no intrusion on their preserves. The United States Consul at Winnipeg was one of the first to realize the great opportunity, and his reports were corroborated by millers at Minneapolis and



FURNACES OF THE DOMINION IRON AND
A monument to the enterprise

St. Paul long before the attention of the world at large had been directed to the "wilderness" which in 1902 produced 75,000,000 bushels of the finest wheat in the world.

Mr. Theodore M. Knappen, addressing the Bankers' Association of Minnesota not long ago, said that at the present rate of American immigration into Canada there would in ten years be farmers enough to produce 250,000,000 bushels of wheat; and deducting the comparatively small amount required for home consumption, Canada will then export cargoes nearly double those of the American shipment of today. The farming population which produces the present relatively great crop of "No. 1 Hard" is at present insignificant in numbers and occupies a territory that is trifling compared to the area capable of

cultivation. In Manitoba and the Northwest Territories 260,000,000 acres of arable land today await the plow.

Seeking contact with American trekkers, I spent a most interesting day in the busy office of the Commissioner of Immigration at Winnipeg, and conversed with a remarkable variety of land seekers. Shrewd-faced deputies from Indiana and Nebraska came in to report their impressions. I found them, without exception, enthusiastic about the country they had been sent to spy out.

"See that rye," pointing to a specimen sheaf seven feet four inches in height. "The land that grows that is good enough for us," one of them replied to my question.

In the first six months of 1902 eighty-six per cent. more emigrants entered Canada than in



STEEL WORKS AT SYDNEY, NOVA SCOTIA
of Mr. Henry M. Whitney

any preceding year. A large proportion of this immigration, 25,000 at least, was of American citizens. The estimates published in the American and Canadian press may in many cases be inflated, and it is extremely difficult to procure accurate statistics. Careful inquiries and my own observation would go to show that forty per cent. of the American immigrants are not entered on the Immigration Commissioner's books, having trekked singly or in parties across the frontier, and not having entered by the ports of registration on the lines of rail. I should say that there are already 70,000 people of American extraction in that country.

It would be erroneous to assume that this migration of Western farmers is due to dissatisfaction with their old homes. Apart from the

tendency of certain adventurous spirits to push toward virgin territory, and the overflow of young men from already congested farming districts, the bulk of the immigrants go to Canada because they can sell their old farms for from \$30 to \$40 an acre in many cases, and can buy as good land under the British flag for from \$7 to \$10 an acre, starting anew under favorable conditions with ready cash in hand. A certain proportion of each new township is of crown lands on which the "homesteader" may secure an allotment on the payment of a nominal fee of \$10 for 160 acres of land, and after a residence of three years, in compliance with homestead regulations, receive an absolute title. Or he may purchase lands from the large grants owned by the Canadian Pacific and Canadian Northern



A LOG JAM

In the rapids above Scotch, Montreal River



HOW WEALTH INCREASES IN MANITOBA

New barn

Old barn

New house

Old house

railroads, or buy a farm from one of the many land companies, chiefly American, which have recently acquired large tracts of the railway lands. The Hudson Bay Company also controls enormous holdings. The total land sales during the summer of 1902 were fivefold those of 1901, with prices steadily rising. Lands selling at \$3 an acre five years ago are now bringing double or treble that price. American capitalists are forming syndicates for the purchase of large tracts for "bonanza" farming. A syndicate headed by T. B. Hoard, of Nebraska, has bought 40,000 acres in an unbroken stretch at \$5 an acre. This farm is near Davidson, on the Prince Albert branch of the Canadian Pacific, and will throughout its great extent be sown in wheat.

I give this as only one example of several large sections of the wheat belt which, within the year, have passed into American hands, chiefly those of experienced farmers from Montana, Minnesota, the Dakotas, Indiana and Nebraska. Many immigrants have selected their homesites in what is known as the semi-arid region, comprising most of Assiniboia and all of southern Alberta, a district already containing a larger population than any other equal area of the Territories. The soil is deep and exceptionally fertile. The Americans settled on the "Soo" line, near Estevan, have gone largely into flax growing. They told me that in their old districts they considered a crop of fifteen bushels an acre as first rate. Their new farms are yielding twenty bushels



ST. JOHN, NEW BRUNSWICK, FROM FAIRVILLE



MR. HENRY M. WHITNEY
Who developed the resources of Nova Scotia



Photographed by Notman

SIR THOMAS G. SHAUGHNESSY
PRESIDENT OF THE CANADIAN PACIFIC RAILWAY



A CORN PLOT
At Indian Head, Manitoba

per acre. They attributed this to the fine quality of the soil and the long solar light of the northern summer day. The reports these men and others similarly situated send to their old neighbors help the steadily growing migration from the Western States. In this district, irrigation, where necessary, is easier than in the higher altitudes of the southern division of the continent. Many canal systems have been completed by individual



FARMERS DELIVERING GRAIN AT THE RAILWAY
ELEVATORS, MANITOBA

enterprise; all are under government supervision. These already irrigate several million acres, and more ditches are being surveyed and constructed. The rainfall is usually abundant, and irrigation is essential only in exceptional years. In the Western and Southwestern States artesian wells are largely relied upon for water supply; in southern Alberta the natural reservoirs contain enough water to irrigate every foot of land. Windmills or steam pumps are not required; the natural fall of the ground toward the northeast is amply sufficient, and, indeed, the main engineering problem has been to modify this descent. On an average the cost of irrigation has been \$2.25 an acre, or less than one-half the cost in Montana, which has the cheapest system in the Union. Some of the Mormon



BRANDING A STEER AT A ROUND-UP
In Alberta

settlements in the irrigated districts of western Canada have been very successful in the growing of sugar-beets; so that wheat is by no means the sole dependence of the new settler. All the staple cereals are raised in the Territories, and mixed farming, dairying

longer a menace; the last serious frost took place as long ago as 1893. Climatic conditions here as elsewhere have been bettered by the opening up of the country. An Agricultural Commission once gravely reported on the climate of Illinois as being



IN THE SAULT SAINTE MARIE CANAL.
A whaleback after a storm on Lake Superior

and ranching, the latter on a large scale, are profitably conducted.

An important effect of irrigation is that it considerably mitigates the danger of summer frosts, though even in the more northern and non-irrigated districts this seems to be no

unsuited for wheat culture! Since then the wheat belt has made two northward jumps of 300 miles each. Climatic conditions give western Canada an advantage over the eastern portion of the Dominion with whose icy breath Kipling's "Lady of the Snows"



MR. CHARLES M. HAYS

Photographed by Notman

VICE-PRESIDENT AND GENERAL MANAGER OF THE GRAND TRUNK RAILWAY SYSTEM



Photographed by Notman

SIR WILLIAM C. VAN HORNE

CHAIRMAN OF THE BOARD OF DIRECTORS AND EX-PRESIDENT OF THE CANADIAN PACIFIC RAILWAY

made the world familiar. The isotherm of sixty degrees, which in July lies north of Quebec, in the east, touches the mouth of the Mackenzie River above the Arctic Circle in the west. As it is rather solar light than solar heat that growing wheat demands, these northern lands, with their long summer days of sunshine, are far better suited to its successful, rust-free cultivation and speedy ripening, than are more southerly stretches. I made particular inquiries concerning the severity

ranches are conducted both on the plains and in the foothills, and of late years have proved most profitable.

Though the recent progress of all this country, since the American discovery, has been phenomenal, it is but an earnest of a development unprecedented in the history of the continent. Already the railroads are taxed to their utmost capacity to handle the crops, and despite the annual increase of branch lines, the construction of new cars,



MOUNT STEPHEN

British Columbia

of the winter, but was assured by American settlers in different sections that it was far milder than an experience in Montana might suggest as existing farther to the north. Temperature is less an affair of latitude than of altitude, and the elevation of the Northwest Territories is considerably less than that of their southerly neighbors. The cattle range free all winter and come through in good condition. Cattle, sheep and horse

engines and elevators, transportation facilities still lag behind the demand. In 1901, with a crop of 50,000,000 bushels produced in Manitoba alone, that grain inspection district had an elevator capacity of less than half the requirements. More railroads and elevators are urgently needed, and it seems probable that Americans will build them.

The share that United States citizens have taken in the discovery and exploitation of the



WITH THE SPOILS OF THE HUNT

Kippewa, Province of Quebec





IN THE CANADIAN ROCKY MOUNTAINS

The lakes in the clouds. Larzon, British Columbia



GENERAL VIEW OF EAST INDIAN HEAD, MANITOBA

Once the home of the buffalo

Yukon, or Klondike, is well known; in the rich mining districts of the Kootenay eighty per cent. of the capital invested is Western American. Mr. James J. Hill is interested in the coal mines of Crow's Nest Pass, and Americans control lignite deposits in neighboring localities. British Columbia is one of the richest gold-bearing sections in the world, and miners have a saying that "If the head

effect of the American invasion from sea to sea. What the social and political result will be it is too early to prophesy. In some quarters of Canada anxiety is expressed, but, it would seem, needlessly. That the fusion of the two peoples caused by counter migration of Americans and Canadians across a purely arbitrary boundary is inevitable is the conclusion of some observers; but



A TYPICAL CATCH OF SALMON
Fraser River, British Columbia

of the rat is in Alaska, and his tail in Montana, his body is in British Columbia." The American mining development of that province has steadily advanced since 1862, when it was initiated by Californians, and the average output of recent years has been more than \$4,000,000 annually.

I have given an outline of the industrial

at any rate, it guarantees the final occupation of the land by men of the same sturdy stock, speaking the same language, and with customs, laws and religion essentially alike. All the way across the continent American pioneering energy is pushing its conquests northward across the line and the industrial frontier is spreading farther and farther.

THOSE WHO LOSE IN THE GAME OF LIFE

INCIDENTS IN THE DAY'S ROUTINE IN THE OFFICE OF
MR. JEROME, DISTRICT ATTORNEY OF NEW YORK COUNTY

BY

ALFRED HODDER

PRIVATE SECRETARY TO MR. J. JEROME

TO the man in the street the business conducted in the District Attorney's office of the County of New York seems to be one of almost unmitigated severity. There, amongst two millions of people, all of the vice and sin and shame and criminal negligence, when they reach the intensely dramatic point, are brought to be dealt with according to the sense of justice of the community. There you may see the murderer, with the heat of passion in which he committed his crime died out, tranquil and self-possessed; the thief and the swindler, buxom and debonair, with all their wits about them; the blooming young girl, she, too, perhaps, accused of murder, consciously making the most of her graces and powers of allurements. To the man inside the office the dominant note, as the theologians would say, of the business conducted there is not one so much of severity as of pathos.

I do not vouch for the old adage that there is no Irishman so poor that he has not another Irishman living at his expense, but it seems certain that there is no man so degraded that there is not a woman to intercede for him when once he has brought himself into the hands of the ministers of the criminal law; and the girl whose trouble has found her has at least a mother. From the time a criminal is arrested, until he has been pardoned by the Governor or has served out his sentence, his wife or his mother or his sweetheart haunts the District Attorney's office, interrupting the graver business of the day by testimony to the prisoner's virtues and the petitioner's distress. Even in the case of an accused police captain, a prosperous, smartly gowned woman, her ears and bosom radiant with jewels, will come to the District Attorney's office and with tears in her eyes explain to him her own and her husband's poverty.

The labor of the District Attorney today begins at No. 8 Rutgers Street as early in the morning as his Japanese servants are willing to answer a ring at the doorbell. A few mornings since his first client was a neat, meanly clad Jewish woman, who explained with much agitation and gesture that her daughter, aged seventeen, had been abducted. At the close of her story she offered him a ten-dollar note. He afterward ascertained that she was a seamstress earning between fifty cents and a dollar a day. When he refused her money she burst into a passion of weeping and left the house. In a few hours two detectives had found the girl and brought her home, much against her will. In the afternoon the mother paid a visit to the District Attorney's office to give him her thanks. "Oh, sir," she said, "when you would not take my money I did not think you would do anything for me."

On his breakfast table, and later on his desk at the office, he finds letters of which the following may serve as a sample:

NEW YORK, June 4th, 1902.

Hon'ble Attorney Jerome,

DEAR SIR—This is a letter for a respectable Woman writing by a friend for the Benefit for her familie & Husband to stop the Husband gambling.

This man is going every evening after 8.30 P. M. playing the open game in the back of a Segar store at — Avenue between 112-113 Street loosing the most of his money he earns. The game he plays is so called 21 with cash money on the table.

Kindly take notice of this above if this please get pulled you will do good about 20 working mens familie.

Your respectfully

A FRIEND OF HONEST LIFE.

District Attorney.

HONORABLE SIR—Would you take the trouble to find out if the Girl from Brooklyn, that is lost, is in No. — Park Ave. Often very young girls call there, and don't leave the house before night, then a carriage is coming to take them away, it must be for a certant purpose, and sure not a good one.

District Attorney Mr. Jerome please take interest in this.

I beg you because We live right near there and we see everything.

Mrs. ———.

New York, the 4 June, 1902.

28 PRECINCT.

New York, Oct. 19th, 1902.

DEAR MR. JEROME—I hope you will pardon the liberty a few broken hearted women takes in sending you thoes few lines hoping you will do something to Put a stop to the Badness that exists on the East Side, it is far worse than the tenderline and Particularly — street & first Avenue & Avenue E. There is a salloon on — St. & — Avenue and it is a disgrace to the city, it is open all day Sundy from five in the morning untill one on Mundy morning. It is full of gamblers & Drinkards all dy and their is nothing but men, woman and children bringing cans all day long. It is the cause of starving poor decent families so we will aske you for God sake to do something to give some relief, their would be no use to speke to the police of — St the know it and you will get them there drinking late & erly. I have seen a drunken man lying on — street for four howers and not a police man ever came along untill a lot of boys dragged him away, in fact you would nevr seen a police man on Sundy and if the men in the — st station hears of this the will send tips to all the saloons so we trust in God you will do some thing for us. Hoping you will Pardon us for troubling you

FROM POOR WOMEN.

June 10, 1902.

Mr. Jerome:

DEAR SIR—I am 17 years old & my Brother & I are the only ones that keep my mother. I make \$6 a week & my brother 18—but he spends all his in a gambling room on cor. —th & — Ave N. E. cor on horses. They are open every day.

Yours truly,

JOSEPH BLANK.

New York, Oct. 6, 1902.

DEAR MISTER JEROME—my son is a member of the Club — E. —th St. and he is loosing his monney Knight after Knight and I am afright he will get in trouble. He work for a dry good hose and he is giving me bother about monney he said it was the best crap game in the place around and he owns two games.

A FRIEND.

The ignorance and the helplessness of the writers of these letters must be sufficiently apparent. Not only the District Attorney, but each of his assistants, is obliged all day long to deal face to face with people of the same stamp as the writers of these letters. Indeed, the letters themselves have been chosen amongst the complaints of those to whom it was possible for members of the office to give some relief; there is a parallel line of cases in which it is impossible for members of the office to give any relief whatever. These are cases in which the man who makes the complaint has without any doubt been

grossly wronged, but in which no evidence can be ascertained sufficient to convict some particular evildoer. The man who has been injured is naturally and perhaps rightly certain of the person, man or woman, who has made him a victim, and is also naturally ignorant and impatient of the technicalities of the law of evidence. The maxim of the law of evidence is that it is better to acquit ninety-nine guilty men than to convict one innocent man. With this maxim the victims of the ninety-nine who are guilty have little sympathy.

A few weeks since an honest German and his honest German *frau* complained that they had been robbed of \$600, their savings for some years. Upon investigation there was no doubt whatever that he had been robbed, and was in consequence in circumstances literally desperate. But there was no evidence whatever at his command or at the command of the District Attorney's office to show who had committed the crime. He insisted that the janitor of the tenement house in which he lived was guilty, on the ground that fresh, crisp bank-notes, such as the complainant had laid away amongst his savings, were found in the janitor's possession. He could not be persuaded that there was in existence a number of crisp, fresh bank-notes other than those which were a part of his savings. After every effort had been made by the District Attorney to discover who had wronged him, he shook his fist in the face of one of the Assistants and said, "By Gott, if you vill not do me justice I vill even take der law into mine own hants, unt it vill be you dot iss guilty."

It was necessary to have him carried to the elevator, his wife weeping and protesting amongst the cortège. To all intents and purposes he had been driven mad by his loss. He was in much the same position as a score of other clients whose misfortunes have put them undisguisedly out of the ranks of the sane.

There is one woman who on an average of once a month writes twenty closely written pages about the genealogy of persons unknown, which are filed in the waste-paper basket, and who sends jewelry of value, which is returned. There is a man in New Jersey who writes twice a week, on wrapping paper, letters of twenty and even fifty folios, mainly in comment upon

the conduct of the President and his Cabinet in matters of international affairs, and in a postscript requests a loan of ten dollars. There is a woman who has a case which no one amongst the officers of three administrations has been able to understand. At a recent date she insisted on explaining her troubles to chance passers-by in the corridor, and emphasized her explanation by wrecking her parasol over the head of the attendant who warned her that she must not block the passage. She also, no doubt, has been the victim of some one's wrong. She also was carried to the elevator. With all sympathy and consideration for the victims of undiscovered crimes, the business of the county must go forward; and, if necessary, kicking men and screaming women must be carried bodily to the street.

Side by side with this thread of pathos in the day's work runs the thread of delight that every virile Anglo-Saxon feels in the hunt and especially in hunting a man. An Assistant District Attorney at the last moment may be almost frightened at his success. One of them now in office recently exclaimed while he was waiting for a verdict: "My God, I am afraid they will find him guilty of murder in the first." But the grim satisfaction in having exercised the skill and force necessary to bring a subtle and ruthless animal to bay appeals to an instinct for the chase which is strong in most men. It is strongest perhaps amongst the detectives. The detective feels a sheer glee in his power and gives the details of his cleverness with a juvenile enthusiasm and a grown man's sense of dramatic climax. He talks about himself as an actor might and takes a frank pleasure in his success, and, indeed, displays much of the technique and many of the talents which make for success on the stage.

"Say, that was a great arrest we pulled off last night," he says to you. Most likely you don't know that he has been detailed to make any arrest whatever. "We went in," he continues, "and bought a drink yesterday" (Sunday) "afternoon, and when we had paid for it I handed the barkeep a warrant for his arrest and said: 'Here is a little piece of paper I want to give you.' When he had got all that was coming to him in the way of information, he said: 'Say, boys, just wait will you till I send upstairs for Charlie to take

my place;' and we said, 'Sure, we are not in any hurry; we are doing our best to be polite.' When Charlie came in the barkeep said, 'Take off your coat, Charlie, and get behind the bar; I have been pinched.' And we said, 'Hold on a minute, Charlie, you need not take off your coat—here is a little piece of paper for you, too.' We wanted Charlie. A more disgusted pair of men you never saw. Then they said they would send for Joe, and when Joe came they asked him to take off his coat and go behind the bar. Joe was the last of the three men we wanted. We said he needn't take the trouble to take off his coat, we had a piece of paper for him, too. All three challenged us to give Joe's last name. We didn't know Joe's last name, but we said: 'That's all right, his name is John Doe,' and we handed him a warrant made out for John Doe. They were so stampeded they wouldn't take a chance on getting another of their pals to look after the bar, and they sent for a shoemaker in a cellar next door."

What robs this spirit of the hunt of the element of savagery is the childlike unconsciousness on the part of the prisoner that he has committed a crime. A member of the city government a few days since was examined in the office on the charge of attempted bribery. When he was brought in under arrest he said, "Why, everybody does that; you do it yourself." It is difficult to conceive a more complete picture of injured innocence.

A member of the police department assigned for duty under Mr. Jerome's orders was examined in this office on the charge of having spent a hundred dollars in marked bank-notes. The notes had been passed in his presence in an attempt to blackmail on the part of a public official. The official had been arrested by him and the notes taken from his person and kept in custody by him to serve as evidence at the trial. When he was summoned in a preliminary star-chamber hearing before Mr. Jerome and the Assistant District Attorney who had discovered the loss of the money, he said: "I lost the bills on the way to the station-house. But I have deposited ten other ten-dollar bills with the Property Clerk, and I'll swear that those are the same bills, so that the case will go on all right. There's nobody but us three knows anything about it. I don't see any reason why we can't keep it quiet between ourselves."

It was at once discovered by telephone that he had not deposited ten other ten-dollar bills with the Property Clerk. On the following day it was discovered that he had pawned five of the marked bills in a loan-shop and was in possession of a pawn ticket entitling him to recover possession of the same.

It is the bare truth that during the last ten years the game of life has been played harder and faster in New York City than in even ancient Rome or modern London. In each room in the tier of suites that forms the District Attorney's office a man who has the entrée may lounge and listen by the hour to the examination of witnesses who lay bare the secret life of the city. The newspapers make public the knock-down-and-drag-out cases, the cases in which every effort to hush up a scandal has been made and has failed. In every room in the District Attorney's office, as a man saunters through them, he is a witness to an examination in which half the secret scandals which will never be given to the public are laid bare. Every day in the District Attorney's office there are a score of secrets kept by a half a hundred men that would bring a price in the newspaper market as surely as a gilt-edged bond listed on the Stock Exchange, and the scenes in these examinations are much more dramatic than the scenes in court.

In court both the accused and the witnesses keep a hand on themselves, being restrained by the authority of the Judge in the presence of spectators. In the District Attorney's office they are without restraint; they explain, expostulate, weep and plead as the mood strikes them. Even as I am writing there comes an Assistant fresh from an interview with a policeman whom he has just convicted. "God! the appeal that man made to me has broken me all up. He was as gray in the face and as wet as a dish-rag, and his hands, when he lifted them up to beg and to protest, shivered fit to shake the bones out. He was only a beginner, too. It was all right to pass him up, but he has a wife and five kids, and I promised to look after them and to get him a job when he comes out of Sing Sing. He has a boy of fifteen he was preparing for college, he says, and the kid has got to get out and hustle to support the family. And his eldest girl, still younger, has got to get out and

hustle, too. He said, 'Mr. —, I thought I had a lot of friends before I got into trouble; you are the only man I have found that would lift a hand to help me.'"

Immediately after this narrative came two Assistants fresh from the morgue and the Coroners' courts. "Those Coroners," said one of them, "are great. The Honorable Coroner Blank has just been making a complaint to me. 'Der District Attorney has been daking away from me my bodies, und you young men, you go down to der house und you turn out the gas and you open the window and let all the evidence out, so dot I can't tell whether der suicide has killed himself or not!'" Thereupon a newspaper man in the room spoke up: "I asked one of the Coroners the other day why he didn't hold an inquest in the Blank case. He spread out his hands with a shrug of the shoulders and said, 'I half no body. If I could get a body I would hold an inquest.' I said to him, 'Say, Coroner, there ought to be a law passed that when a man commits murder he shall be prohibited from taking the body out of the State.' 'Yes, yes,' said the Coroner, 'dot is a good idea. I, too, think there should be such a law!'" And another man present told the story of a Coroner aforetime who asked a physician on the witness stand, "Doctor, vat I want to ask you is this: I don't vant a scientific disquisition, but just a hand-off opinion. In your judgment is *rigor mortis* a sure sign of death?" I myself had spent the day in the criminal branch of the Supreme Court watching Roland Molineux on the witness stand minute by minute saving his life by his wit and tact and coolness under cross-examination. And that is a picture of the day behind the scenes in the District Attorney's office.

A few nights since at a presentation by Mrs. Patrick Campbell of the "The Second Mrs. Tanqueray," Mr. Jerome said to a member of his staff: "It seems an unnecessary prolongation of the work of the day to sit here. We've been both hearing and seeing this sort of thing since nine o'clock this morning. Let's go to Weber and Fields'."

It is not good for a man to live long in the District Attorney's office. He sees too much of "Mrs. Tanqueray" and too little of Weber and Fields.

THE PROPORTION OF CITY AND COUNTRY POPULATION

REASONS FOR BELIEVING THAT OUR CITIES HAVE REACHED THEIR GREATEST PROPORTIONATE GROWTH, AND THAT HENCEFORTH THE COUNTRY WILL RELATIVELY GAIN RATHER THAN LOSE

BY

FREDERIC AUSTIN OGG

OF INDIANA UNIVERSITY

OUR gravest question of population is summed up in the problem of the city. In the balance of urban against rural population lies the future character of our national life. We are sometimes told that we shall at last be a nation of cities; because since 1800 the proportion of the dwellers in cities of 8,000 people or more to the total population of the country has increased from 4 to 33 per cent. Such cities in 1800 numbered six; in 1900 there were 545 of them. During the recent decade 1880-1890 the urban population increased 61 per cent. while the rural population increased only 14 per cent. During that decade 10,063 townships in various parts of the United States—39 per cent. of the whole number in 1880—actually decreased in population. While Chicago more than doubled, 792 townships in Illinois alone lost in numbers.

Coming to the decade still nearer (1890-1900) there was a decrease of rural population in every one of the North Atlantic States except Rhode Island, Connecticut and Pennsylvania; and the same thing must be said of Ohio, Indiana, Illinois, Nebraska and Kansas. Only one State in the Union—Nebraska—suffered a loss in urban population in the same time.

The population of incorporated places was 41 per cent. of the total population in 1890 and 47 per cent. in 1900. There were eight States in 1900 in which the proportion of urban population was more than two-thirds, and seven others in which it was more than half. Even counting places of only 8,000 or more, the percentage of urban population in Massachusetts was 76; in New York, 68; in New Jersey, 61; in Connecticut, 53; and in five other States between 40 and 50. In view of our notorious inefficiency in municipal gov-

ernment, such facts as these will make us pause. Either we must learn how to govern ourselves properly in cities or we must devise some means of preventing the people from continuing to crowd into them.

The question is, Is there to be a reaction from the city? There is no need to ask whether our cities will actually decline in population—that is quite impossible—but is the rate of increase of urban population to undergo a diminution in favor of the rate for rural population? Many have assured us that such a reaction may be expected. Too often, however, such a prediction has been based merely on a sort of general theory that society moves by actions and reactions and that, given time enough, the people may generally be relied upon to swing from one extreme to the other. The growth of cities has come wholly by reasons of economic conditions—the application of machinery to industry, the rise of the factory system, and the improvement of ways of communication; and, if it is to be checked, forces no less practical must be brought into play.

There are certain reasons which seem to indicate that a reaction is already setting in. The first reason is that our city population

Classified sizes of cities	Number of cities	Increase from 1890 to 1900		Increase from 1880 to 1890	
		Number	Per cent.	Number	Per cent.
25,000 - 50,000	83	706,524	33	858,662	68
50,000 - 100,000	40	642,169	31	608,860	57
100,000 - 200,000	19	603,882	33	799,493	79
200,000 - 300,000	8	443,318	28	490,959	47
300,000 - 500,000	5	372,916	27	390,772	40
500,000 - 1,000,000	3	310,401	23	289,016	27
1,000,000 - 2,000,000	2	845,458	39	796,459	59
3,000,000 and over	1	929,988	37	595,716	31

is growing considerably slower now than it grew fifteen or twenty years ago. The

accompanying table will show these facts more specifically.

Other reasons for believing that urban population will grow more slowly in the future are less matter-of-fact, perhaps, but hardly less convincing. Among these is the increased attractiveness of country life due to modern improvements, the better and easier utilization of the land under a more scientific agricultural system, the constantly increasing demand for such food products as are grown by farm labor, and the further extension of facilities for communication and transportation. Country life today in most parts of the United States means something very unlike what it meant a generation ago. Rural mail delivery, telephone service, the consolidation of schools and the provision of public transportation for school children, the cheapness and general circulation of newspapers, magazines and books, the improving of common roads and the multiplication of railroads and electric lines—all these and many other things are revolutionizing the life of the farmer.

It is contended by some that the further introduction of scientific farming will so reduce the number of men needed for agriculture that a constantly increasing surplus will be left to drift to the city. But the advance of science is made to serve the manufacturer even more than the farmer. It has been estimated by an expert in the employ of the Government that agricultural machinery reduces the number of men employed to do a given amount of work to one-third, while manufacturing machinery reduces the number to one-fiftieth.

Another change which will almost inevitably occur along with the application of science to the practical work of agriculture, but which has too often been overlooked, is the growth of intensive farming. Small farms, economically administered, will be the rule in the future. The day is coming when such a thing as a "worn-out" farm will be unknown. Land and its products will become too valuable to permit of further impoverishing of the soil.

Obviously this will mean an increase in rural population and the production of food in greatly increased quantities.

It is true that there must always be a limit to the amount of food products which the world can consume. And it is likewise true

that this limit is much more easily reached than is that of the quantity of manufactured goods which may be disposed of. Even if there were nothing to be taken into account but the strictly proportionate increase in food consumption as the number of people to be fed increases, the outlook for agricultural activity would be exceedingly bright. But the growth of wealth and better conditions of living tend to augment in increased proportion the demands upon the farmer. A hundred people in these days consume more than twice what fifty people consumed half a century ago. The very surplus population which we are told must continue forever to gather in the cities must be fed, and it is the farmer who must meet the demand. Then there are the European and Asiatic markets to be considered.

Already it is beginning to be felt that the most serious difficulty in the way of agricultural enterprise in the United States is a scarcity of labor. Even with all the labor-economizing devices and machinery that have been introduced there is yet a need for more workmen. Doubtless the solution of the problem lies in increasing still more the profits and pleasures of rural life.

The city will continue to grow, and grow rapidly. But as time goes on, rural population may be expected to increase relatively as fast as the urban population. More food products and raw materials will be demanded, so that it will be increasingly profitable to belong to the agricultural classes.

What vast room we yet have for increase of our population almost staggers belief. Although it has practically doubled every quarter-century since 1789, the extent of our territory robs this remarkable increase of the ill omens that it would carry in many Asiatic or even European States. Professor Albert Bushnell Hart, of Harvard, some years ago advanced the opinion that the Mississippi Valley alone is capable of supporting 350,000,000 people in comfort. The population of this same region by the census of 1900 was less than 41,000,000. The rate of increase per decade has recently been from 20 to 25 per cent., so that we may expect at least two centuries to elapse before the Mississippi Valley population will have attained Professor Hart's figure. Even then the density will be no greater than the present density of Massachusetts.

THE MAN THAT FAILED

THE SAD FATE OF GENERAL TORAL, WHO COM-
MANDED THE SPANISH FORCES AT SANTIAGO

BY

THOMAS R. DAWLEY, JR.

IT is a sad story that comes from Spain that General Toral, who surrendered Santiago, has suffered an eclipse of mind. He is the Spanish culprit of the war. I saw him shortly after the surrender. In a drizzling rain he stood in one of the lower streets of Santiago, a water-proof cloak drawn over his shoulders, his Panama hat pulled down in front, taking leave of a group of officers about to go on board the transports for Spain. They were gathered around him in a semicircle.

"Gentlemen," said he in a low voice, "it is not your fault that you find yourselves in this situation. You did not lack courage, you did not lack bravery or energy on the field of battle. You fought valiantly, but we were left without resources, without adequate munitions of war, even without food supplies, and we were obliged to give way to an enemy no braver than you, but better provided with the elements of war. You have all done your duty, and now that you embark for Spain, remember that should circumstances call us together on the other side, and should you need me, you can count upon me as you have in the past."

With these words the Spanish General turned sadly away and the officers slouched on board the ship which was to carry them home with their emaciated, dying soldiers. As the old General with bowed head went up the street I could not restrain my impulse of going up to him and offering him my hand with an expression of sympathy. He grasped it, saying that he felt deeply gratified at my words, and he could only thank the victorious Americans for their kind treatment of him and his officers; and then his words seemed to stick in his throat.

He was the last officer to leave the capitulated city. A few days before his departure I called upon him at his residence. It was a stormy night, and the house was shrouded in darkness. An orderly answered my knock-

ing, and in the gloom told me that the General was ill, but he invited me in and shuffled off after a light. Presently he came back with a lamp and led me into a room in which there was a hammock, a plain board table and a single chair. In the dim light I would not have recognized the General, who lay in the hammock wrapped in a blanket, had he not held out his hand bidding me welcome. He was ill of fever, and, directing the orderly to place the chair close to his hammock, he bade me be seated.

I spent an hour or more with him, in which he asked and answered many questions, gave his views of the war and his opinion of the American soldier. "We Europeans have studied all about European armies," he said; "we have studied and compared them—the spirit and dash of the French, the plodding earnestness of the German, and the sober tenacity of the English, but the Americans we ignored. We never considered you a military people. We were made to believe that you were a nation of shopkeepers and merchants, and that the few soldiers you had were mercenaries with neither discipline nor a knowledge of the rules of war. But the fighting around Santiago has been a revelation. It was nothing like anything we have been taught in the books of the European schools. Your soldiers did not advance upon our positions with the *esprit de corps* of the French, nor with the steady advance in solid rank of the German and the English, but they came as individual units, each man seeming to suit himself how straight and how fast he should come. And they kept coming, firing as they pleased, and our volley-firing seemed to have little or no effect upon them."

Referring to his surrender he said: "Since I accepted your terms and sent my soldiers into camp outside the city, I have lost eight hundred men from the fever; and there are eight hundred more dying. I don't see why," and then hesitating with a far-off look, as he

waved his hand toward the San Juan lines, "it would have been far better to have lost these men in battle."

I inferred that he was going to say that he did not see why he had surrendered, and he now regretted that he had done so; but recovering himself, he added in an explanatory way: "I could not have done otherwise; I did not have ammunition enough to last through another battle, and my soldiers were starved and weak. I had to—I capitulated, but I did not surrender."

General Toral returned to Spain. The populace which witnessed the disembarking of his fever-stricken, emaciated troops at Ferrol proceeded *en masse* to his lodgings and pelted the house with stones, breaking the windows and crying out against him. Arriving at Madrid, he was arrested and thrown into prison, because it is the unwritten law of Spain that an officer who surrenders must die. After an imprisonment of five months and a trial he was released because he was able to show that he was authorized by the Madrid Government to capitulate, but he was sentenced to retirement from the army and prohibited from ever holding office of any kind again.

When the war was all over a New York publishing house conceived the idea that an account of the surrender written by General Toral himself would be interesting and would be of historical value. When the subject was proposed to me I volunteered to undertake the commission of going to Spain after it.

Arriving in Madrid I found few who could tell me anything about the fallen General. At length I found his lodgings. An old woman told me that he had retired to Murcia, a southeastern corner of Spain. I arrived in Murcia after a ride of all night and all day.

Coming down to my breakfast at about eleven o'clock, I fairly ran into the arms of a little Spaniard in civilian attire who recognized me at once. He was Major Langoziaste, Toral's field-aid at Santiago. While the Major was talking to me as though he were glad to see me, his wife appeared.

"I must see you at once," she said stiffly, and bowing, she led the way down the corridor, little Langoziaste looking back, waving his hand and smiling as he said: "We will go and see the General; I know he will be glad to see you." I can only imagine what his wife

said to him for receiving a Yankee so joyfully in a public place. There could be no other reason for my appearance there, in the eyes of the people, than to pay the rest of the blood money for which it was supposed Toral had surrendered.

The little Major disappeared as if swallowed by the earth, and though I remained in Murcia more than a week, I was unable to see either him or General Toral. The people treated me kindly and talked with me freely. But many of them believed that the Spanish troops had been surrendered for gold.

One man said: "General Toral escaped the death sentence because he was ably defended, but he is condemned by the Spanish people, and Murcia is the only place in Spain where he can live, because it is his native town."

I called at his house. But my knock was answered by an intelligent girl who declared that the General was not at home. I then wrote him a letter explaining my mission. My letter remained unanswered. That was three years ago. Now the story comes that while the General was wandering around Alhama, a message was delivered to him from the Spanish Government instructing him to draw up a full account of the battles and surrender at Santiago. The old General continued his walk, muttering, "The surrender! the surrender!" and then it was discovered that his reason was unstrung.

It is a sad story, especially when it is believed by a few in a position to know that the responsibility of the surrender was shirked by General Linares, who was in actual command of the Spanish troops at Santiago till their defeat in what is known to the American soldier as the big fight on the hills around the city. A Spanish priest who was a canon of the Santiago Cathedral during the time, assured me in Madrid that Linares had wounded himself slightly in the arm at the close of that day's battle purposely to avoid the responsibility of the surrender which he evidently realized must come. The father said that he saw him brought in from the front carried on a litter as though seriously wounded, but the moment the litter was set down in front of his door he got up and walked upstairs, there being nothing the matter with him except the slight wound in the arm. Arriving in Spain, he was loaded with honors, while poor Toral, upon whom the command of the army devolved, was condemned to disgrace.



A DAY IN THE REGULAR ARMY

THE LIFE OF A PRIVATE CAVALRYMAN FROM REVEILLE TO TAPS IN A WESTERN MILITARY POST

BY

HAMILTON M. HIGDAY

LATE LIBRARIAN U. S. CAVALRY AND FIELD ARTILLERY SCHOOL, FORT RILEY, KANSAS

PRIVATE SMITH of "B Troop," of the 1st Cavalry, knew to a certainty it was 5:15 A. M., and that the trumpeter, having blown "First Call" before the barracks, was already stalking toward the flag-staff to send more and nearer blasts down the "line"—the officers' street; and that a few seconds later the echoes would be stirred by new waves of sound.

So Trooper Smith, with half-humorous, half-protesting growl, swung his feet from under the gray army blanket, and his towed head and undershirt came suddenly upright. All along the row of iron cots in the squad-room springs creaked and the sound of rough waking calls arose: "Git up, y' dog-robber!" "Climb out o' th' bugs!" The soldiers had just ten minutes to dress—trigly and completely, too.

Then, as the last eye of his leggings was corded up, from out on the centre of parade ground came the trumpet corps' resounding salute to the sun—the march—

and the instant the first note sounded on the quadrangle, the deep "boom!" of the morning gun down behind the guard-house hurled its impact against the round green hills across the river whence came successive reports; then "Reveille," clear and shrill—

"I can't get 'em up—I can't get 'em up—I can't get 'em up in the morning;

I can't get 'em up—I can't get 'em up—I can't get 'em up at all!

Corp'rals worse 'n privates!

Sargeants worse 'n Corp'rals!

Lieut'nants worse 'n Sargeants!

And the Capt'ns the worst of all!"

Down the stairs from the second story squad-rooms and across the main porch swarmed the troopers, coming down upon the brick pavement—straightening a belt here, pulling down a blouse there, stepping automatically into line before the call "Assembly" and the First Sergeant's stentorian "Fall in!" and "Atten-shown! Roll-call! D—n it, keep yer faces t' the front!" The roll-call proceeded:



AN ARMY PACK TRAIN ON THE MARCH

"Private Allen!"—"Yer-r-r!"

"An'ers'n!"—"Yike!"

"Beale!"—"Yhope!"

"Brown!"—"Yow!"

And so on down the alphabet. At closing the "top" Sergeant "about-faced" and saluted

flagstaff—a Captain standing straight as a statue and not unlike one as the yellow rays of early sun glinted on scabbard and sword-belt, danced on the reddish leather of polished leggings, and played over his campaign hat and khaki uniform.

At 5:45—it was now summer, and in this season and garrison the "Mess Call" was early—down the stairs clattered eighty or a hundred feet again to breakfast: fried beef-steak, a little tough from overfrying; brown gravy, "too greasy" the cook would have been told had the Captain inspected mess that morning; potatoes, roasted "with their jackets on"; bread, heavy and dark—a healthful and sufficient breakfast, despatched with greater ease than elegance—a judicious combination of the regulation ration issued by the Commissary Department and careful economy of the troop's share of the profits of the post exchange or "canteen."

"Not less than twenty minutes for break-



A MAIN DIVISION

Rapid fire mountain guns leading

toward the centre of the parade ground with a "Troop B, —th Cav'ry, all present and accounted for, s-i-r!" The answering "All right!" came from the Officer of the Day somewhere on the cinder path toward the

fast," says the "Blue Book"—U. S. Army Regulations; but the Colonel of this post gives three-quarters of an hour, as any one would find from "General Orders No. 4" in the Sergeant-Major's office over in the Administration Building—the printed schedule of garrison routine, "By Order of Colonel Blank."

The trumpet again:

"Come all who are able and go to the stable
And get out your horses and give 'em some corn,
For if you don't do it the Col'nel will know it,
And then you will rue it, sure as you're born!"

This in the soldier's language is "Stables." Five minutes later at "Assembly" the line of men before the barracks, this time in white canvas stable clothes, march off to the stables, where every man advances to his numbered horse and proceeds to "police up," feeding, watering and currying. Or perhaps it is "Boots and Saddles," when, in the uniform



AFTER DRILL AND MESS CALL

designated in "orders," the entire troop march with heavy, quick tread and machinelike uniformity to the stables, saddle up and lead forth the horses into line. "Count fours! Prepare to mount! Mount!" and they are in the saddle for mounted drill, moving forward at the "Howmp!" of the Captain—the unspellable command for any and all things—who has meantime ridden up with clanking saber and rattling spurs.

As the column moves past the parade ground, Trooper Smith catches a glimpse of three squads of "Rookies" (raw recruits) on the quadrangle, each in charge of a Sergeant drillmaster, the nearest one at saber drill—"Port sabahs! 'Gainst infantry left parry!" come the commands, short and sharp, and miniature lightnings flash where the polished blades catch the glint of the sun. Farther



CAVALRY GUARD MOUNT

he closes his lips tightly and flashes a glance of rebellion at the non-com. (a Sergeant, by the three-striped chevrons on his arms) who has "bawled him out" for "yanking" the tossing head of his restive mount. But he dares offer no word of explanation or excuse.



A SQUADRON OF CAVALRY

away another Sergeant is swearing volubly and vigorously while a particularly awkward squad blunders through "setting up exercises." On the most distant side the men are spreading out in a skirmish line ("deploying"), running forward with the "rebel yell," and dropping flat as so many frogs in the grass, operating their carbines aimed at imaginary Filipinos "at 500 yards!" and then rising for rapid volley firing.

A mile or two miles, across a bridge, or through a neck of woods, or over a hill road to the drill ground selected rides the troop—perhaps all three or four troops of the cavalry squadron under the eye of the Major—alternating a walk and trot, now and then a gallop.

"Quit jerking that horse!" bellows a non-commissioned officer, riding alongside the column. "Hain't ye got no sense a' tall?" And as Trooper Smith is the offending object

The rigid rule is—*No talking back.* Trooper Smith has no desire to forfeit a month's pay to the Soldiers' Home at Summary Court in the morning, or to dig up sewer pipes and scrub the guard-house floor with an armed sentry ten feet behind him, for three months.



TRAINING HORSES IN THE RIDING SCHOOL



FIRING A SIEGE GUN



PRACTISING ON THE RIFLE RANGE

Three hours of the morning are taken up in drill—often two mounted, one dismounted—and the men today are in blue army shirt, khaki trousers, leggings and campaign hat; the commissioned officers alone resplendent in khaki blouse, belt, saber and polished leather leggings. For today the exercise happens to be "monkey drill"—men without equipment, horses without saddle—vaulting, Cossack and backward riding, mounting at gallop; sharp, quick work, exhibiting the splendid horsemanship of the cavalry and the agility and admirable physique of these blue-eyed healthy-faced Anglo-Saxon fellows of the American Army.

Nine o'clock and "Recall." by token of a

trumpet blast, which the horses recognize as the signal for return fully as well as the troopers on their backs! At the stables again, tired from drill and the increasing heat of a humid day and glaring sun, horses are to be watered, rubbed down, and the stable "policed up"—the saddles and fittings hung in precise order according to regulation; then the formation "out front" and the march back to the barracks to "wash up," clean and burnish equipment and put clothing in order.

The Captain and his Lieutenants ride off to their quarters for a bath and a rest before "officers' call" at noon, when they report at the Adjutant's office for orders, given orally or filed in pigeonholes.



A SOLDIER'S FUNERAL IN WINTER

At noon out on the parade ground the bugler says:

"Soup-y, soup-y, soup,
Without a single bean;
Pork-y, pork-y, pork,
Without a streak of lean;
Coffee, coffee, coffee,
The meanest ever seen!"

From one o'clock until four is a daily holiday for the soldier except when on guard or "doing fatigue"—a season, however, wherein arms, uniform and man must be kept clean and presentable, bedding aired, and covers rolled in the manner prescribed.

At half-past four the ubiquitous trumpeter is again heard "wind-jamming" out in front of quarters—"Stables" again, and amid groans and oaths and rallying jests the troopers "tumble out" to be in line at assembly call.

Guard mounting is the spectacular performance of the day. Out upon the parade ground in perfect military formation moves the band, the chief musician and his privates—the "oom-pah" man in all his glory and fine raiment. To hear, to see and be seen, if the day be fair, the ladies of the post gather along the "officers' line"; the Major at the Officers' Club leaves his mug of beer and army journal to join them; the Lieutenants postpone the contest at billiards for the same reason, and the Captains come out on the clubhouse porch, tilt back their chairs, with feet on the banisters, to look and listen. Out beneath the flag (which flutters on the staff from "Reveille" and the morning gun to "Retreat" at sunset) stands the Adjutant—the Colonel's representative. Martial airs thrill through the garrison. From the barracks come the guard details, our Trooper Smith among them, marching to music with a surge of blood and a firing of patriotism that the monotony of routine, social isolation and the humphousness of officers cannot extinguish. They "left front into line," these men selected by the Sergeant-Major to stand guard during the coming night and day, "order arms" until they are verified and inspected—while the band plays on. Every article of clothing and equipment must be in perfect condition, and the smartest-looking soldier is selected to act as the Colonel's orderly the next day—a desirable duty which Trooper Smith narrowly misses because the cartridges in his belt, rubbed to glisten like silver, are deemed not sufficiently brilliant to outshine the polish on the shoes of Trooper

No. 6, who consequently does not have to remain with the others in the guard-house during the night.

At last the band strikes up a march and swings across the parade ground and back again, and then again past the Officer of the Day—this time followed by the new guard in column of platoons led by the Adjutant. Finally in column of fours they proceed to the guard-house preceded by a trumpet corps whose tooting, in contrast with the band music, grates harshly on one's ears, or makes one smile as the mocking chorus of garrison dogs accompanies with yelps and yowls.

Before the guard-house, where the sentries stand on either side of the prisoners (the latter in brown fatigue clothes painted conspicuously "P 9," "P 27," etc., across the back and on the legs), the "old guard" is drawn up. "Atten-shown! Present harms!" bawls the sergeant of the guard as the blaring trumpeters and heavy treading new guard march past. The guard just mounted salutes the old with guns at the "present," and the Captain or Lieutenant who has been for a day practical commander of the post, as soon as the prisoners are counted and verified with the records, is relieved with his guard by the new Officer of the Day.

Out of the "new guard" Number One, as sentry, day and night (two hours "on" and four "off") marches up and down the beat before the guard-house; Number Two, Number Three, etc., patrol the hay-corral, the stables, the commissary and the quartermaster's storehouse; and mounted patrols ride to and fro through the post until daybreak, challenging after eleven o'clock with a sharp "Halt! Who is there?" all who may be passing, requiring mounted parties to dismount and advance to be recognized.

The old guard has dispersed. On the morrow at seven, when the dreaded "Fatigue Call" sounds, they assemble before the Provost Sergeant, clothed in the fatigue uniform of brown duck, and go where he directs, armed with garden rakes or shovels, some of them in charge of an army wagon and a team of Government mules, to perform "police duty."

After "Mess Call" and supper and near the sunset hour, "Retreat" brings all enlisted men to "attention" and "parade rest" before the barracks and guard-house; the evening gun echoes along the hills, and all officers stand at "attention" with bared head while

the strains of "The Star-Spangled Banner" rise on the air and Old Glory is being hauled down.

As dusk comes on happy children romp on the lawns "down the line"; along the drives floats silvery and deep-toned laughter accompanied by the clatter of horses' hoofs and the ring of spurred heels on stone walks.

But Trooper Smith tries not to hear such sounds. It is a world not open to him. The Chinese Wall of rank is an impassable barrier between him and the "West Point aristocracy." He is treated by his officers as though contact were contamination, and his American soul fills with bitterness at the tyranny of army "discipline." He therefore bets the drinks with his "bunkies" on the outcome of the Sunday baseball match between rival troop teams, or gossips about a recent row in "Mike's place"—one of the typical, parasitic dens in the nearby town that reaps a monthly harvest of soldiers' squanderings of their \$13 pay. He listens to the click of billiard balls in the barracks

poolroom; he tells the corporal he wishes to h—! he were tramping around down town—"Attention!"

Trooper Smith springs to his feet and stands rigid at attention with the other enlisted men on the guard-house porch. An officer is passing. Sentry Number One presents his piece and, as the salute is acknowledged by the officer, resumes his march.

At half-past nine as "Tattoo" (lights out) is blown, Trooper Smith is marching from the guard-house with a "relief party"; and he is sauntering to and fro along a solitary beat himself when "Call to Quarters" and a few minutes later "Taps" are sounded—eleven o'clock, and all men not then to be found in quarters or on pass or duty are absent without leave and subject to military punishment.

"Five months and thirteen days more," mutters Trooper Smith as he changes his carbine to the other shoulder and looks toward the arc of light where the belated moon is rising, "—and a breakfast!"

AMERICAN MANUFACTURES

THE ADVANCE OF INDUSTRY IN THE UNITED STATES AND THE DIRECTION IT IS TAKING

BY

EDWARD D. JONES

ASSISTANT PROFESSOR OF COMMERCE AND INDUSTRY IN THE UNIVERSITY OF MICHIGAN

THE Twelfth Census marks the close of the first complete century of manufactures in the United States. It will thus become the most important statistical basis by which will be measured the future advancement of American industry. It is with these words that the final report of the Twelfth Census on manufactures begins. It might have been added that the Twelfth Census is the first to occur since the United States has become distinctly a manufacturing nation and has produced a surplus of manufactured goods with which it has entered the world's trade to acquire foreign markets. Our industries have grown to giant size, and we have begun to feel and act upon commercial policies which have radically altered our relations both to European nations and to undeveloped countries and peoples.

HISTORY

In 1791, when Alexander Hamilton submitted his celebrated "Report on Manufactures" to Congress, he was able to refer to the household system of manufacture by means of which each family unit supplied many of its own needs; and he described the remarkable development of this type of manufacture in southern New England, where considerable quantities of coarse cloth, clothing and nails were produced. In addition to this, some twenty industries were mentioned which had reached a considerable development, involving special buildings, the division of labor, the ingathering of raw materials from distant localities and the distribution of the manufactured articles throughout the States. Among these were tanning, iron manufacture, ship-building and furniture manufacture, the mak-

ing of cordage, brick, distilled liquors, paper, wool, hats, whale oil and candles, copper utensils, tobacco, turpentine, flour, etc.

While this was a respectable beginning, the chief task of the American people was to be for at least five decades to push forward the frontier.

Up to 1840 this work went on. By that time compact settlement had reached the Mississippi River, and the further growth of population required the building of railways and the establishment of manufactures. By 1850 the chief forms of labor-saving agricultural implements of American origin were introduced and began their work of liberating an increasing proportion of the population from agriculture. The Civil War increased the need of the country for manufactured articles, and, accompanied as it was by a high tariff to provide Government revenue, provided a powerful impulse to develop home manufactures. Down to 1880 agriculture was the chief source of wealth in this country. The last two censuses have shown manufacture to be dominant. In 1900 the value of agricultural products was four and seven-tenths billions of dollars; the net value of manufactured products was five and nine-tenths billions.

We may group our industrial history into periods, therefore, roughly as follows:

1609—1789	Colonial period.
1790—1840	Period of Western settlement. Agriculture for home consumption except cotton.
1840—1880	Period of agricultural dominance. Large export of raw materials.
1880—1900	Dominance of manufactures for home use.
1900	Period of foreign trade in manufactures as well as raw materials.

GENERAL COMPARISONS

To gather some of the chief results of the recent census investigation into a few sentences we may say that when we speak of "American manufactures" we mean 512,339 establishments, using \$9,835,086,909 of capital, and involving the labor of 397,174 officials and clerks and 5,316,802 wage earners. This vast equipment consumes \$7,348,144,755 worth of raw materials annually and makes out of the same manufactured products worth altogether \$13,014,287,498. These figures all show a healthy increase over those of 1890. There are forty-four per cent. more establishments now than

then; fifty per cent. more capital is used; a fourth more wage earners are employed; and the annual value of the gross product is forty per cent. more than in 1890.

Our rank among the manufacturing nations of the world is first, for, according to the estimates of the late Mr. Mulhall, we produce about half as much as all of Europe combined. The United Kingdom ranks second, Germany third, France fourth and Austria-Hungary fifth.

The significance of \$13,000,000,000, the value of the manufactured articles produced in 1900, is difficult to realize. It is nine and one-third times the authorized capitalization of the greatest corporation on earth, the United States Steel Corporation. It is one-fifth of the true value of all real estate and personal property in the United States reported by the census of 1890, or about the value of New York and Pennsylvania combined at that time. So great an annual product has been produced by our manufacturing establishments only in recent years. The product of 1890 was \$9,372,437,283, that of 1880 \$5,369,579,191, that of 1850 but \$1,019,106,616.

In 1810 the manufactured goods produced in this country were worth \$27.58 per capita of the population, or \$165.48 for the average family. In 1860 manufactures were worth \$60.06 per capita, or \$318.32 for the average-sized family of that period. In 1890 the per capita value was \$149.72, or for a family of 4.9 persons \$733.63. In 1900 the per capita value of manufactured goods was \$172.21, or \$809.39 for the average family of 4.7 persons.

CLASSIFICATION OF ESTABLISHMENTS

There are three ways in which manufacturing establishments may be classified:

1. According to the general economic class to which they belong.

The 512,254 establishments considered by the census as "manufacturing establishments," in the strict meaning of the term, are divided into:

Household industries and repairing	215,814
Manufacturing—other	296,440
To these we may add small establishments producing annually goods valued at less than \$500	127,419
Government establishments	138
Educational, charitable and penal establishments	383

2. The second classification of establish-

ments is according to the form of organization employed. It is as follows:

Individual ownership.....	372,703
Partnership.....	96,715
Company or corporation.....	40,743
Coöperative association.....	1,765
Miscellaneous.....	174

The corporation is the form in which the larger businesses are usually organized, and controls 59.5 per cent. of the product. Coöperative associations are confined to the manufacture of butter, cheese and condensed milk.

3. The third classification is according to industry. The Twelfth Census has given us for the first time a carefully digested grouping of manufactures. It involves fifteen headings and is as follows:

(1) Food and kindred products, (2) textiles, (3) iron and steel, (4) lumber, (5) leather, (6) paper and printing, (7) liquor and beverages, (8) chemicals, (9) clay, glass and stone, (10) metals other than iron and steel, (11) tobacco, (12) vehicles for land use, (13) shipbuilding, (14) miscellaneous, (15) hand trades. Of these classes the most numerous, excepting the hand trades, is the first, "food and kindred products," with 61,302 establishments. The least numerous class of institutions is that for shipbuilding, in which there are 1,116.

THE MANUFACTURING POPULATION

The statistics show that 29,000,000 persons over ten years of age are engaged in productive industry. A little over a third of these are in agriculture, a fifth are in domestic and personal service, a fifth are in trade and transportation (16.4 per cent.) and the professions (4.3 per cent.) combined, and a fourth are in manufactures and the mechanical pursuits, including mining.

To this latter fourth belong the 5,713,976 persons engaged in manufacture. In the last twenty years the number of persons in professions, trade and transportation and manufacture has increased relatively. The number of persons in agriculture has decreased relatively. The domestic and personal service class has remained constant.

The proportion of men, women and children in manufacturing establishments is such that if a given establishment employing 100 persons desired the typical division of men, women and children, it would be obliged to employ seventy-seven men over sixteen years of age, twenty women over sixteen and three children or young persons under sixteen.

POWER

Half of our manufacturing institutions use power of some sort to supplement hand labor. So liberally and skilfully is power used in the United States that the average output per employee is between three and five times what it is in England. The most prominent fact in the evolution of sources and forms of power is the increase in the use of electricity.

GROWTH OF LARGE ESTABLISHMENTS

The census shows the increase in the size of plants by showing that, while the product of manufacture has been increasing in almost all lines, the number of establishments has been declining in many of them. There was in 1900 a smaller number of establishments than in 1890 manufacturing agricultural implements, boots and shoes, carpets, glass, iron and steel, leather, woollens and the products of slaughtering and meat-packing; nevertheless, in each of these industries the average capital, the average number of employees and the average product per establishment increased and the total product of each of these industries increased.

A more direct but not more positive proof of this tendency is shown by the enumeration of large establishments. In 1900 there were 452 plants in each of which over 1,000 employees worked. Of these 120 were in textile manufacture (one in New Hampshire employing 7,268 persons), 103 were in iron and steel manufacture (one in Ohio having 7,477 persons), forty-eight were in vehicle manufacture, twenty-nine in food products, twenty in metals other than iron and steel and 132 in miscellaneous lines.

Turning to the question of industrial combinations, we find some interesting statistics in the census. A list of 185 such organizations is presented. They controlled 2,040 plants, possessed a combined capital of \$1,436,625,910, employed 400,000 wage earners and 24,640 officials, and manufactured products annually valued at \$1,667,350,949. That is to say, 8.4 per cent. of the wage earners engaged in manufacturing in America were employed by these combinations and 14.1 per cent. of the value of our manufactures originated with them. The census report does not include the United States Steel Corporation nor any other combination organized during or since the census year. The steel corporation is largely cov-

ered by the above figures, however, since most of its constituent companies rank as combinations. The great dividend payers among the "trusts" in 1900 were the Standard Oil Company, American Steel and Wire Company, Federal Steel Company, American Sugar Refining Company, Amalgamated Copper Company, Pullman Company, American Tobacco Company, Continental Tobacco Company and the United States Leather Company.

LOCALIZATION OF MANUFACTURES

The industries of the United States are most of them strongly localized in certain regions. This tendency to develop a territorial division of labor has always been marked in this country, in agriculture as well as in manufactures. The causes which lead to the location of industry in certain places are enumerated by the census:

1. *Nearness to materials.* This is illustrated by the oyster canning of Baltimore.

2. *Nearness to market.* The agricultural implement manufacturers of Chicago find their best market in the region which is tributary to that city.

3. *Water power.* Fall River, Mass., with its textile manufacture, Cohoes, N. Y., with its knitting industry, and Niagara Falls, with its electro-chemical industries, have resulted from the utilization of water power.

4. *Favorable climate.* The Piedmont section of the South attracts cotton mills, not only because of its nearness to materials and its water powers, but because of its favorable climate.

5. *Supply of labor.* The garment trades are largely monopolized by New York City, Philadelphia and other large cities on the coast because there a large population of foreign birth, with low standards of living, furnish adequate supplies of cheap labor.

6. *Capital available for investment in manufacture.* When the whaling industry declined, New Bedford, which had become wealthy by means of it and was ranked as one of the richest cities in the United States, put considerable of its capital into cotton manufacturing. The city of Chicago was not able to surpass Cincinnati as the centre of the pork-packing industry in the West until the local banks acquired enough money to aid the packers in carrying the enormous financial load of buying the raw materials, which for

that business constitute about 75 per cent. of the value of the finished product.

7. *Momentum of an early start.* Sir Wm. Johnston early brought gloves from England to Johnstown, N. Y., and started the industry for which that city and Amsterdam and Gloversville are now noted. Had the celebrated "shoemaker of Lynn" settled in a neighboring village Lynn might not now signify shoes wherever the name is heard.

If we examine a map showing the location of American manufactures we shall observe that they are markedly concentrated along the Atlantic seaboard, from the middle of Maine to the latitude of Baltimore, and covering a region extending perhaps 100 miles back from the coast. West of this an irregular belt of country, including middle New York, western Pennsylvania and northeastern Ohio, stands out prominently. Passing still farther west we find the manufacturers not so evenly distributed, but rather concentrated at certain points, such as Cincinnati, Louisville, the gas belt of Indiana, Chicago, Milwaukee, St. Louis, Minneapolis, Kansas City and Omaha. The South shows a large number of small, rather isolated manufacturing localities. These occur most frequently upon the Piedmont plateau, from southern Virginia to northern Alabama. In the Rocky Mountain States and the region west of them, five centres stand out separated from one another by wide intervals of undeveloped country. They are the middle portion of Colorado, Salt Lake Valley, the Butte region of Montana, the Puget Sound and Columbia River cities, and San Francisco, with the adjacent cities from Sacramento to Alameda.

The national centre of manufactures has been fixed at a point east of the middle of Ohio, about twenty-five miles southeast of Mansfield. It has moved west only about forty miles in ten years. The centre of population lies 200 miles southwest of this, at a point about eight miles from Columbus, Indiana.

California is first in preserving vegetables and fruits, vinous liquors, lead smelting and refining.

Connecticut is first in ammunition, glassware, clocks, corsets, cutlery, needles and pins and hardware.

New York is first in thirty-one industries, among which are butter and cheese, gloves, factory-made clothing, furniture, chemicals,

hosiery, malt liquors, lithographing, printing and publishing, millinery and lace goods, paper and pulp, patent medicines, soap and candles, sugar refining, cigars and cigarettes.

Illinois is first in the manufacture of agricultural implements, bicycles, cars, glucose, and distilled liquors, and in slaughtering and meat packing.

Wisconsin is first in lumber and timber products.

Minnesota leads in flouring and grist mills.

Texas leads in cotton ginning and the manufacture of products from cotton seed.

Some manufactures are limited to very restricted areas, a group of States or a single State or even a portion of a State confining them. The most highly concentrated industry is the making of collars and cuffs, of which 99.6 per cent. is within New York State and 85.3 per cent. is in the single city of Troy.

The tendency to centralize industry has given rise to cities which are chiefly devoted to one occupation. The city most wholly given up to one thing is South Omaha: 89.9 per cent. of the products of this city are the output of the great packing houses located there. A list of cities of 20,000 and over in population, in each of which 40 per cent. or over of the industrial products belong to one branch of manufacture, is as follows:

Shoes—Brockton, Haverhill, Lynn.

Agricultural Implements—Springfield, O.
Collars and Cuffs—Troy.

Cotton Goods—Warwick, R. I., Fall River, New Bedford, Lewiston, Me., Manchester, N. H.

Fur Hats—Bethel, Conn., Danbury, Conn., Orange, N. J.

Glass—Millville,* N. J., Tarentum, Pa., Charleroi, Pa.

Knit Goods—Cohoes.

Iron—McKeesport, Youngstown, Johnstown, Pa., New Castle, Joliet, Pittsburg, Trenton.

Jewelry—North Attleboro, Attleboro.

Gloves—Gloversville, N. Y., Johnstown, N. Y.,

Pottery—East Liverpool, O.

Silk—West Hoboken and Paterson, N. J.

Slaughtering and Meat Packing—South Omaha, Kansas City, Kan., St. Joseph.

CITIES

About one-half of the manufactures of the United States are turned out in our 100

largest cities. These cities contain 23 per cent. of the population. About two-thirds of these products come from the 209 cities having over 20,000 population. The greatest concentration of a manufacture in cities is found in the case of men's and women's clothing, hats and caps, cars, umbrellas and canes, lithographing and engraving. The smallest degree of concentration is found in the case of flour and grist mills, distilled liquors and brick and tile.

New York City is most cosmopolitan in its manufactures, exhibiting the greatest variety of them, and having a number of establishments which are the only ones of their kind in the country. In 1900 there were 39,776 manufactories in New York City, employing \$9,250,000 capital and 500,000 persons, turning out goods annually to the value of \$1,371,000,000. The most numerous class of establishments in the city was for custom work and repairing of boots and shoes, of which there were 3,341. There were more than 1,000 establishments each for the manufacture of cigars, women's clothing, dressmaking, carpentering, men's clothing, and also for plumbing, painting and blacksmithing. There was only one establishment each for the manufacture of bells, felt goods, firearms, leather board and car-fare registers.

ACHIEVEMENTS AND THE OUTLOOK

The general causes which have made us a great manufacturing nation and the advantages which we now possess have been placed under five headings:

1. *Agricultural resources.*

2. *Mineral resources.* It is plain that a country which produces nine-tenths of the world's cotton, one-third of its coal, one-fourth of its iron ore and one-half of its copper and a similar generous share of many other things, such as lumber, grain, hides and petroleum, has a great advantage in the matter of raw materials upon which to set labor and capital at work.

3. *Transportation facilities.* These include the remnants of a neglected canal system, a magnificent but scarcely used system of navigable rivers amounting to 18,000 miles, and a highly important system of Great Lakes waterways extending for 1,000 miles and carrying a tonnage "equal to nearly 40 per cent. of that of the entire railroad system of the United States." Our railway system, con-

structed with great rapidity between 1860 and 1880, is now over a third of that of the world. In 1899 the total length was 189,295 miles, as against 172,621 in Europe, and the cost of moving goods was less here than in Europe, being on the average less than six mills for carrying one ton a distance of one mile.

4. *Freedom of interstate commerce.*

5. *Freedom from tradition.*

As an example of American ingenuity we may cite the invention of the system of interchangeable parts, which has made possible the use of complex machinery in agriculture or other industries at a distance from machine shops or the point of original manufacture. Activity, skill and willingness characterize the best type of American workmen, and this willingness is shown, in part, by a readiness to pack bag and baggage and move to those places where manufacture can be carried on most economically, especially if it be to a large city. The organizing ability of American capitalists cannot be doubted. There is scarcely an industry upon which the peculiar genius of the American has not wrought an effect.

In food manufacture we began with the slowly revolving millstone, but Oliver Evans originated the system of automatic conveyors now in use. When later this was coupled with the middlings purifier, also of American origin, and the Hungarian roller process in a modified form, the modern mill first became a reality. Here the factory system was first applied to the making of cheese and butter, resulting in the cheese factory and creamery. An instance of a wonderful application of machinery to a complex process is afforded by our slaughtering and meat-packing establishments. While the production of beef extract in South America is reputed to be one of the most wasteful industries in existence, involving the destruction of an entire carcass of beef to produce a few pounds of extract, the American method with beef and pork products is based upon the utmost despatch through the division of labor, continuous refrigeration from factory to consumer, and the utilization of every product so that there is no waste. It has been said that the packer gets everything out of the hog but its squeal, and this he gets out of the public.

In textile manufacture we are now the second nation in the world in the number

of cotton spindles operated, and first in the amount of cotton fiber used.

In iron and steel manufacture we have passed our chief rival, Great Britain, several years since, and now English ironmasters who visit us say that nowhere in the world are labor-saving devices so masterfully designed and employed as here. In the using of steel we are quite as original. To this the heavy rolling-stock and rails and bridges of American railways testify. Here structural steel was first employed in buildings. The structures into which the first girders went are still standing—Cooper Union and Harper's Publishing House in New York City. An enormous demand for iron and steel is created for agricultural and mining and manufacturing machinery and also for electrical equipments and gas and water pipe. Nowhere are stoves and ranges made so large and beautiful as here, and nowhere is tin plate used so lavishly. In lumber and leather and paper and other lines the record is similarly encouraging.

There are some things lacking, however, some lines of effort along which we have not progressed as far as we might have wished. We do not yet convert into flour all the bread-stuffs we export. This is partly due to foreign tariffs on flour. We have never developed the manufacture of linen beyond the coarsest kinds of toweling. The difficulty with this industry is that the retting of flax must be done by skilful, patient agriculturalists, willing to work for small wages; and American farmers are neither skilful nor cheap laborers at this task.

While in steel shipbuilding the construction of our own navy has been a worthy achievement, we have contributed little to the steel tonnage used in international trade, and this is true not so much because ships cannot be built well and reasonably here as because the cost of operating them with American seamen is prohibitive and is not counterbalanced by liberal subsidies.

True, as a manufacturing people we have rather made a hobby of "production on a large scale," and "quick returns," and "machine methods." We have perhaps overrated quantity and cheapness of price, and undervalued solidity and durability of wares and subdued colors and correct proportions combined with simplicity and honesty of material beneath the surface. These are the natural defects of a people accustomed

to dealing chiefly in raw materials, among whom wages are high and life is lived fast. Machinery must always be excepted from this criticism. That is a means to an end, and hurries us on to our goal. We are more exacting in the choice of means than we are discriminating in the choice of ends themselves. To put this in the phraseology of the economist, producers' goods

maintain a higher standard than consumers' goods. We are more proficient in the process of wealth production than in living the ideal life to which wealth is intended to minister. If we could so simplify life as to gain opportunity to examine things closely, we might learn to appreciate them when well done, and we might then find time to make things better.

AMERICANISM FOR BRITISH TRADE-UNIONS

WHY I BROUGHT A COMMISSION OF BRITISH LABOR LEADERS TO
STUDY AMERICAN INDUSTRIES — WHAT GREAT BRITAIN CAN LEARN
FROM THE UNITED STATES — THE HIGH QUALITY OF AMERICAN WORK-
MEN — A SUGGESTION TOWARD SOLVING THE LABOR PROBLEM

BY

ALFRED MOSELY, C. M. G.

IT has been my fortune of late, both in England and in the United States, to be frequently asked my reasons for bringing a party of English trade-union representatives across the water to study American industries and American labor conditions. They consist, as these pages will show, of facts that cannot be blinked and of hopes which promise fulfilment.

Years ago in the gold and diamond fields of South Africa I met, one after another, a little army of American engineers. Mr. Gardiner Williams I ran across by chance one afternoon at the spot that afterward became the Johannesburg gold fields, standing beside his outspanned oxen, just ready to make camp. I met the late Mr. Louis Seymour when he came to the Colony to work for De Beers at \$2,000 a year—plucky Louis Seymour, the best engineer that America ever sent abroad, who rose by his efforts to a salary of \$50,000 a year, and only a few years ago, after zealous engineering work in the war, died a brave death at Sand River, defending one of the bridges against attack by the Boers and in the act of leading his men to cover. After him came Perkins and Jennings and Hammond and others, all Americans. Beneath the hands and brains of these men the wealth of South Africa grew. The gold mines and the diamond mines, which had never paid

before, began to pay beyond all expectation. Wherever things were accomplished there were the Americans. I began to wonder, as time went on, what manner of country it was that produced such able, level-headed, efficient men; and accordingly five years ago I visited the United States and traveled throughout its breadth, daily becoming better aware of the methods by which the country is making its marvelous success.

Soon after my return events of world-wide importance began to shape themselves and take on unmistakable import. The United States leaped to the position of the leading exporting nation of the world; and Britain, its industries slowly recovering from the effects of the costly engineers' strike, its whole internal development checked by the war in South Africa, showed signs of industrial crystallization. The United States was, and is, forging ahead with a rapidity unprecedented in the history of nations. Britain was, and is, advancing far too slowly for its own economic safety in the rush of twentieth-century competition. For the United States, with all its vast resources in the way of food-stuffs, is no longer an agricultural nation, but a manufacturing nation also, and in this respect a competitor of Britain. With a vast gain in the aggregate production under each of these heads, the proportion of exported

goods from the United States has changed thus in thirty years:

	Agricultural Products Per cent.	Manufactures Per cent.	Others Per cent.
1879-1881....	77	16½	6½
1899-1901....	63½	29½	7

The export of manufactures alone grew from an average of £40,000,000 in the years 1889-1891 to an average of £82,000,000 in the years 1899-1901, an increase of over fifty per cent. in a decade, while the increase of the United Kingdom was but nominal. Meanwhile the population of the United States increases twice as fast as the population of Britain; and its resources in foodstuffs, coal, iron, oil, copper and many other imperative necessities of modern industry are vastly greater.

These last particulars make it clear that the United States is destined to hold the first rank among the producing nations of the world. In the matter of manufactures, on the other hand, it has not been clear to me that there has been any divine dispensation except the law that "God helps those who help themselves," granting the United States a special advantage over the United Kingdom. At the same time nothing was clearer to me after my first visit than that, except in ship-building, the United States at present does possess an advantage. I have been able to perceive a better spirit pervading industry, both among employers and employees, than prevails at home, where employers ascribe the backwardness of British industry to the oppressive rules of the trade-unions, and the unions ascribe it to the blind unprogressiveness of employers. The better spirit in the United States has led to better methods than ours. Accordingly, recalling what I had seen of American methods in South Africa and in the States, and viewing with some sincere alarm the condition into which British industry had fallen, I endeavored to evolve a plan whereby American methods could be introduced into Britain to the lasting good of its economic well-being.

By far the best suggestion that presented itself was to invite the British trade-unions to select representatives, one from each, to form a commission for the purpose of studying American industries and the condition of American workmen, in the hope of discovering the causes of American success. I thoroughly believe in trade-unions properly managed;

and I believe that, with all their mistakes, the British trade-unions take a patriotic interest in British industry. If these representatives, so the matter presented itself, should find American workmen living as well as British workmen, or better, and yet producing a greater amount per capita, I had confidence they would disseminate among their associates on their return a spirit of emulation. If they should find that American employers show a keener, up-to-date spirit than English employers—as I am convinced they do—I had confidence that the agitation they might arouse would put the blame of British industrial backwardness where it should rest—on the shoulders of employers; and the employers, I hoped, would rouse themselves to proper efforts. If public opinion needed stirring up on such matters as public education—for I believe that the mainspring of American success is American public education—I felt that the demand of these men, representatives of the working people, would be heeded as perhaps a demand from any other class would not.

I came to the United States, therefore, to arrange for the reception of the commissioners and to seek aid in our enterprise. On returning I set to work to find the largest unions and to discover the most fitting men to invite. I then issued invitations. Ambassador Choate provided me with letters of introduction to Mr. Carnegie, Mr. Schwab, Bishop Potter, Mr. Morris K. Jesup, Mr. Abram Hewitt, Mayor Low of New York, and many other representative Americans. Bishop Potter brought me into contact with the Civic Federation and the American Federation of Labor, and these bodies, as well as many large employers, offered their assistance to facilitate the inquiries of the commission. Thus labor and capital, and the Civic Federation representing the best spirit of both, extended to the commission a typical American hospitality.

Meanwhile the commission was forming at home. Most of the unions at once accepted the invitation and elected in most cases their General Secretary as representative. There was, of course, some misunderstanding, some evidence of the feeling that has delayed the progress of Great Britain, expressed in the thought, "We have nothing to learn from America." I received many letters of which the following is a type:

FOLKESTONE.

Dear Sir: Please excuse the liberty I have taken in writing to you, but speaking as a mechanic I think it would be a waste of time and money to go to America for what we can do here as well if we are given a chance—at least, the writer of this is open to take on anybody from America or anywhere else. The reason why the American workmen succeed is because they have the desire for it. As far as I am concerned, I should consider it a disgrace to say I went out there to learn anything; the only way to do it would be to help them here that have a desire to get on. There are such workmen here, but they are simply smothered by shoddy mechanics who do not want to know while they can get the same money as those who try to get on. In conclusion I beg to say I do not want any help myself, but mean to fight it out alone because I have been told it's no use trying. I am well known in Folkestone as second to none in my own trade—or anything else. I have the tools to work with, because it's not the tools but what is behind them, the desire to do it—and for so doing I am called a ——— and a ——— because I will try to go ahead. I am fighting the patent office single-handed, including the cycle makers who have been boycotting me and other people because we will not ride a hash-up of what came out in 1842 and a death-trap. When I can get a few pounds together I will go to America, having given up all hopes of doing anything here.

Yours respectfully,

J. E——

This writer was unusually incoherent, but he phrased, with some basis of truth, the idea that the British workman has little to learn from the American. Yet he phrased it without knowing whether it were true or not, and without recalling that just such a trip might result in removing the "smother of shoddy mechanics"; and this insular self-sufficiency colored more than one mind, I found from my correspondence. As the unions, however, were glad to send their representatives to see if anything might be learned, the commission started, each man pledged to study conditions carefully and answer fully on his return questions like the following:

1. Is the American lad better equipped by early training and education for his work than the English lad?
2. If yes, what changes would you suggest in the English system of education for the working classes?
3. What are the hours of work in your trade in America, and how do they compare with the hours in England?
4. Does the American workman do more or less in an hour, on the average, than the English workman?
5. When skilled workers on piece-work increase the output per man by their own efficiency, do American employers cut down wages so as to prevent a man earning more than a certain amount?
6. Where weekly wages are paid—

(a) Do the men show any anxiety to do their

best and to give a fair day's work for a fair day's pay?

(b) On this system do personal energy and initiative meet with a due reward?

7. Are suggestions for improvements made by the employers, the introduction of labor-saving appliances and of up-to-date machines welcomed by the men or the reverse?

8. Are suggestions for improvements made by the workmen welcomed and rewarded by the employers?

9. (a) Do the workmen attend on a larger number of machines than in England?

(b) If yes, does the system benefit both employer and workmen, or does either side reap an unfair advantage from it?

10. Is the American workman capable of exercising initiative and of working without frequent and detailed directions? How does he compare with the English workman in this respect?

11. Does the American workman exert himself at times of special pressure, and at such times do overwork cheerfully? How does his overtime output compare with the output of the normal day and how does he in these respects compare with the English workman?

12. Are the American employers more accessible to their men than English employers?

13. Speaking generally, are there greater opportunities for the working-man to rise in America than in England?

14. How far is greater output in American factories due to

(a) Longer hours of work?

(b) Greater speed at which the machinery is run?

15. Are there any points in American practice which should in your opinion be imitated in English factories?

16. (a) Are the American workers better fed than the English?

(b) How does the price of food in America compare with that in England?

17. (a) Are the American workers better clothed than the English?

(b) How does the price of clothes in America compare with that in England?

18. (a) Are the American workers better housed than the English?

(b) How does rent in America compare with rent in England?

(c) Do more workers, relatively, own the houses they live in than is the case in England? If yes, to what circumstances do you attribute this?

19. How does the average wage in your trade in America, *expressed in money*, compare with the average wage in England?

20. How does the *value* of the American wage compare with that of the English, *cost of living being taken into account*?

21. Is it true that the American working-man does a larger amount of work in early manhood than the English, but that he deteriorates young, and that his working years are shortened?

22. Is it true that the American workman is thrown out of work at an early age?

23. (a) Is it true that the average life of the American workman is shorter than that of the English workman?

(b) If yes, is this due to overstrain, less healthful climate, or to some other cause?

24. Are a larger or smaller proportion of American working-men dependent on the public purse than is the case in England?

25. Do the children and friends of American working-men who are either past work or incapacitated by ill-health or accident help them to a greater extent than is the case in England? If yes, to what do you attribute the difference?

26. Do you consider the general conditions of life of the workman better in America than in England? In what respects might American examples be copied so as to improve the conditions of life in England?

The commission has now completed its tour. It was accompanied throughout the journey by Mr. Marcus M. Marks, President of the National Association of Clothing Manufacturers. Mr. S. B. Donnelly, formerly President of the International Typographical Union, gave welcome service to the commission; and manufacturers and trade-union representatives in the various cities we visited gave us every assistance in securing information. The party have now returned to England, where they will prepare reports on what they have learned, to be disseminated in pamphlet form among the members of their respective unions. No doubt some of them will also give lectures illustrated by photographic lantern slides secured by Mr. E. F. Keller on the trip for this especial purpose. Whatever good may be accomplished, at all events there are possibilities for good in the propaganda these men will disseminate, for not one has failed to mark phases of American activity that might well be put into practice at home. I cannot here set forth the concrete discoveries made by the commission without forestalling their reports; but traveling with them I have had several ideas and contrasts driven home to me with resistless force.

Britain suffers first of all for lack of what I find to be the crowning glory of American civilization—a highly developed system of public education. British children, it is true, have primary school opportunities, but only the few who win scholarships may gain a high school education free, and this only because of endowments. Only the few selected from the high schools for scholarships may have free university training. In the United States, on the other hand, there is a school on every corner; the towns, the cities and the States take so profound a pride in their systems of free public education that no American boy or girl lacks an education through the fault of the community. Never

can Britain equal the United States in natural resources, the first element of this country's greatness; but it can establish an educational system like the one that furnishes the second element. And it should—for if I were asked why American employers are "up to date" and American workmen efficient, I should answer, "The United States has excellent public schools, and its people make use of them."

In the United States, furthermore, to make another point, the man with capital is eager to invest that capital in productive enterprises. There is not the same readiness on the part of wealthy men in Great Britain to enter "trade"—even an unwillingness on occasion to grant for commercial uses patent natural advantages that may lie, for example, on the edge of great estates, which, like fetishes, must be kept intact. An observer of both nations is struck at once with the aloofness of a part of capital from industry in one country and the contrasting cumulative momentum of practically all capital in the other country helping to drive industry ahead. There is a difference, too, in the normal attitude of employers—this bearing, I sincerely believe, on the restriction of output and the opposition to machinery with which the English trade-unions have been frequently charged.

There should be no restriction of output; it leads to the ruin of industry. If the English unions have pursued the policy they should drop it—every man should be free to do his best work and to rise through his own exertions. But it is also true that employees should receive fair treatment and the full fruits of their labor. And it needs to be said that the shortcomings of English industry have not lain altogether, or even in greatest measure, at the door of the unions. The trouble has been that employers have expected too much work for too little pay. They have had too little desire themselves to stimulate the initiative of their workmen. Suggestions by workmen, looking toward greater economy or greater effectiveness, such suggestions as an American workman might bring to his employer knowing he would be thanked and rewarded, are not only not welcomed but repelled. An English workman offering such suggestions gets off lightly with a reprimand—he is more likely to be "sacked." The manufacturers, moreover, have not merely kept

their men at arms' length, but they have not kept themselves up to date in scientific methods of production—in economical factory organization and in the latest and best machinery. The employers are most to blame for English restriction of output. Had they treated their men on the same liberal terms as the bulk of American employers treat theirs, and had they been as keen in installing new machinery, we should have heard very little of restriction of output or of labor troubles generally. Restriction should go, and the employers should lead in dismissing it. It is based, where it exists in England and where it exists in the United States—for it does exist in both countries—on the economic fallacy that there is not work enough to go round. True, there is not in congested spots. But in the newer English-speaking countries, South Africa, Canada, the United States, I have studied industrial conditions with care, and I know that now, at this moment, the world is crying for intelligent and willing hands. There is no dearth of opportunity; there is a dearth of labor—but the worker should go to the task; never will the task go to the worker.

Just this lavishness of opportunity here has helped the United States to its present eminence. There has been unequaled opportunity and it has been grasped. There is no doubt that the American workman is infinitely better clothed, better fed and better educated, and that he feels independent and self-respecting to a higher degree than his fellows across the water. He is more sober. He does not waste his money in betting. He has a greater ambition—because of widely diffused public education—to rise, himself, to raise his family, and to realize his responsibilities to the older members of his family if they happen to be left in want. In no country have I seen less poverty, crime and drunkenness than here or fewer public charity wards, or so few beggars. Brains and hands are cheerily working to exploit to best advantage unparalleled resources, as new avenues are constantly opening to give new opportunities. Here, however, as in England, the labor problem is pressing because such is human nature—the condition is a thousand times worse in England than here—that labor will not always go to the task that awaits far off, preferring to conserve every possible chance to perform some task at a more or less tradi-

tional home. I could say with heartfelt sincerity to the workmen of England what Horace Greeley once said to the youth of America, "Go west," for I believe that one day they must go west—to the United States, or to Canada, or south to South Africa or Australia—but so long as too many stay, a sociological problem must be solved, the problem of the elevation of the masses.

The chosen method of the workmen is the trade-union. So be it. The unions, mistaken in policy as they sometimes are, have already raised the condition of working people as perhaps no other single force has raised it. It is the business of communities and of employers, therefore, since the workmen will have unions, to educate them out of economic fallacies, to show them that wisdom does not come from firebrands, and to treat with them; for after all it is easier to deal with an organization than with aggrieved unorganized workmen. Such action tends toward industrial peace.

It has seemed to me that the ideal solution of difficulties has been worked out by the Civic Federation, a body whose effort it is to get employers and representatives of workmen to meet in close contact at round-table conferences and to investigate each other's conditions and points of view with the hope of eliminating prejudice and bringing vexed questions to a satisfactory outcome. That is the way to settle labor troubles. The commission have agreed with me in this opinion to the point of signing a memorial asking for the formation of a Civic Federation in England. I am confident that as a result of our visit to the United States one will be formed.

I may be permitted to add one more thought in view of the fact that socialism is not uncommon in America as well as in English trade-unions—a growing force, I might say. It is that the English and the American people have too much common sense ever to eliminate from industrial life the element of individual initiative that has made Great Britain and the United States what they are. But that workmen and employers shall both receive full return for their efforts—capital refraining from trenching on the rights of labor and labor refraining from trenching on the rights of capital—I believe that the following division of the fruits of industry will one day be made: fair wages for the workmen; a fair return on capital invested,

a percentage for depreciation of plant and for extensions; old-age pensions for workmen; an equal division between capital and labor of whatever remains in the form of profits. I do not expect to live to see any such division, but I am confident that such a division,

retaining as it would every incentive to the greatest efforts both by employers and workmen, is what the industrial world is coming to, what the ceaseless war between combinations of capital and combinations of labor will eventually result in.

WHAT THE BRITISH UNIONISTS SAW

A RECORD OF EXPERIENCES GAINED BY ACCOMPANYING MR. MOSELY'S BRITISH COMMISSION ON THEIR TOUR—THE TROUBLE WITH ENGLISH INDUSTRY—HOW THE UNITED STATES IS WORKING OUT THE LABOR PROBLEM AND ORGANIZING ITS INDUSTRIES

BY

M. G. CUNNIFF

(The fourth of a series of first-hand studies of labor problems)

THIS morning, when I asked a member of Mr. Mosely's British delegation if he thought American workmen labor faster than their English fellows, he drew his watch and said: "Look there."

We were facing a modern office-building, rising on a corner of Twenty-third Street, New York, on which a mason was backing granite facing with fire-brick. In five minutes by the English delegate's watch the man had laid one brick.

"I've been watching him, off and on, all morning," said the Englishman, "and that's his pace, twelve bricks an hour—and he's pretty busy at that. He reminds me of a workman I knew at home who could busy himself with a single brick all day. I remember one frosty morning the foreman saw him drop his trowel to flail himself with his arms. Foreman said, 'Hi, why don't you warm up by working?' 'Hunh,' said he, 'I'd rawther g'home frozen t' death than tired.'"

This incident has the picturesque delusiveness that easily leads to false conclusions about union labor both in England and here; for though neither workman was a type of anything but individual laziness, sweeping generalizations are made from such stories that confuse the labor problem faster than large facts can clear it up. A superintendent of construction on a great New York building told me one day last summer that the union bricklayers he employed were speedy and efficient workmen. Any builder, he said,

can get good masons. That is a larger fact than the existence of an occasional shirk, but, unfortunately, such facts do not stick well. As for England—well, the story is quoted because for years we have heard of the "ca' canny" tricks of British bricklayers, exploited by just such tales, and as the man who told this, jocosely holding the watch on the Yankee masons, about whose energy he had heard, was the chosen representative of the British bricklayers, I knew he made light of one Englishman's inertia because he could show that the man was not a type of all English workmen. Indeed, he and his associates have made clear to me many features of both English and American industry that will furnish the thoughtful, as George Meredith says, with a bone to gnaw.

Through the courtesy of Mr. Alfred Mosely I accompanied the English commission of trade-unionists, concerning which Mr. Mosely writes in this magazine, on their tour of investigation through American industrial centres. During the summer I had studied American labor-unions, about which I have written in other articles, and I hoped, with foundation, that living east and west with the leaders of English unionism I could gain a fresh point of view of American labor conditions and at the same time learn the union side of the "ca' canny" tales that come to us from England. So I set out across the State of New York to catch the commission, which already had the start of me.

Over the New York Central the commission went to Schenectady to see how locomotives and electrical apparatus are made; to Niagara Falls and the great manufactories there, where I caught them; thence over the Lake Shore to Cleveland, where ship-building and other industries were studied; on to Chicago, back to Pittsburg via Dayton, to Philadelphia and Washington, and then to New York, whence the various delegates scattered to investigate their special trades in the East. Manufacturers enabled the English visitors to visit their plants; and all day the hotels where the Englishmen stayed were besieged with local labor-union representatives eager to introduce the foreign unionists to American workmen who would testify as to wages, hours, speed of work, the use of machinery and working and living conditions. Foregathered with these men amid scenes of vigorous industrialism was an inspiration in Americanism, even though many things I saw I pray will never take root in American life.

Here is what I mean. From a sociological point of view American industries are organized in three ways—all successful. In one the employers treat with trade-unions and make collective bargains as to wages and hours. In another the employers refuse to treat with unions, but pay good wages, inspire initiative, and maintain clean, wholesome factories. In another the employers hire cheap foreign labor and pay them poorly, sweating their profits from boys and girls and women in unwholesome workshops. I visited, for example, a cigar manufactory where little girls with flying fingers were toiling so fiercely at piece-work to make six dollars a week that they rocked from side to side with a pitiable rhythm; and in the cloakroom of the factory hung a placard which read, "Six cents a week will be deducted from each pay envelope for the use of soap and towel and grindstone." "Some kinds of prosperity," quoth one of the Englishmen when I spoke of this, "can be bought too dear." This factory is mentioned because there are plenty of others like it from which the English visitors could learn nothing. The other two kinds, on the other hand, were busily maintaining sound American prosperity and teaching lessons in every wisely conducted detail. They emphasized the fact that in the United States labor and capital are slowly working out a *modus vivendi* with a spirit such

as Mr. Mosely is trying to arouse in England—a desire for a thorough understanding between employer and employee. Convinced from previous inquiries that labor troubles exist in the United States, where they do exist, despite the admirable efforts of the Civic Federation and wise employers and labor leaders, because there is a less clear mutual understanding than there should be, I was struck by the admiration these British union leaders expressed for the pleasant relations between American workmen and employers. I believe, moreover, that we have not yet learned the true condition of British industry—the true importance, I mean, of the employers' shortcomings in Great Britain.

Take, for example, the widely exploited story of Mr. James C. Stewart's swift building of the Westinghouse works in England, which is accompanied always with the statement that British unions restrict their members to four or five hundred bricks a day, one-third as many as an American lays. Mr. H. V. Taylor, the General Secretary of the British Bricklayers' Union, maintained to me that the "American" record of 1,000 or 1,500 bricks a day at the Westinghouse plant near Manchester was only on straight foundation work—a pace no faster than any British mason would set on that class of work for the wages paid. As the walls rose higher, he said, and the work became more difficult the pace hardly exceeded the regular four or five hundred. "I know," he remarked, "because I watched that work."

"But bricklaying," he went on, "is slower in England than here. In New York I will show you why." Later he did by pointing out walls shooting upward which, he said, were so slight that the building laws of England would declare them unsafe. He pointed to ornamental stone-work.

"That work," he said, "we do in brick and no workman living can build such decorative brick-work and lay more than our union masons—one hundred and fifty a day. Your brick-work, too, is laid in parallel single walls with mortar in the intervening spaces. British architects now require that walls shall be bonded or locked together by the overlapping of the bricks on every layer—the bricks of the back wall with the bricks of the front—'grouted up' and 'flushed' are the terms."

With illustrations from brick-work that we

saw he gave these and other technical reasons to show that American work is faster than English merely because it is flimsier. "'Locking' every course of brick instead of every fifth course, as fifteen years ago," said Mr. Taylor, "has added thirty-three per cent. to the labor cost of bricklaying, and yet employers, demanding the added work, ascribe the increased expense to union restriction. They should look nearer home. And in so far as it is true that Mr. Stewart hurried his masons somewhat by paying more than the union scale, why, any other employer may hurry his men, and the Lord bless him, by using similar means. Employers can't expect an American pace on five times more complicated tasks than American masonry calls for, and at weekly wages of about ten dollars—an American mason's pay for two days. Not the 'ca' canny' unions, but the 'ca' canny' employers are the ones to wake up."

That was the tale throughout the trip. "We do not have this machine," an Englishman would say in one shop. "We don't employ that method," one would say in another. "The shops I know are not so well arranged as this," a third would remark. And one declared: "It is not so much that your men work faster as that American employers give them the best machines and arrange their work economically; that's why your output's bigger—your employers are up to date." Only the ship-builders were unmoved. "Our yards are better," they reaffirmed when I said good-by as they left for England. "In twenty-five years you won't catch us. You specialize your work; we specialize our men. And our method's better." But in other industries, agreed the members of the commission, American supremacy rests on automatic machinery, on subdivision of labor, and on the ambitious spirit aroused in workmen by the democratic contact between employer and workmen—all lacking in England.

In the great Carnegie steel works at Homestead I walked about with the representative of the British ironworkers over iron floors that scorched his shoe-soles, peering now through blue glasses into open-hearth furnaces where molten steel was boiling with the effervescing liquidity of soda-water, and now dodging a cherry-red billet swinging meteor-like through the air in a pair of tongs. Yet in those thunderous rooms where red-hot plates,

full fifty feet long, ran back and forth through the rolls with a deafening musketry crackle as a workman sprinkled them with saltpeter, and then shot snakily out with their ends lip-lapping serpent-like along the rollers to the table—in all the successive infernos I missed the figures of men running here and there. Why? The men were not there. Three or four stood about each roll and a dozen or two were marking the finished plates in a shop at one side. Yet the plant simply clamored with activity. Gigantic tongs whirled here and there, great blocks of red-hot steel flew magically into place, shot along toward the rolls, smashed through, flopped over, smashed back again with a splatter of sparks, flopped over, ground through again, and then ambled off apparently alive up a long course of rollers. Glowing chunks of steel weighing tons serenely rolled and slid and flew through those mighty rooms as if animate. Uncanny electric cranes glided smoothly overhead. Trains of incandescent ingots puffed in and out. What moved it all? Well, there was a man sitting quietly at a lever here, another sitting there, and a few conversing quietly near the rolls; and as they crooked a finger now and then the whole pandemonium dinned its industrial pæan and steel products were created. "No, we don't have machinery like that," said my English companion. "Our men move the stuff about."

I should think so. Who does not have the idea that men "move the stuff about"? But American industry is great because men sit in chairs moving levers, and massive devils do mighty tasks at their bidding. Or perhaps little delicate devils keep crazily grinding or gouging or spinning—like one at Schenectady marvelously winding insulator on copper wire, a delegate told me, with a fascinating precision one could watch all day—and no man near it. Or like others I saw in rows in an instrument factory in Cleveland that crooned away to themselves in an oily song and dropped out bolts and screws with the regularity of clock-ticks. Or strident devils like a mortising machine in a Chicago furniture plant with an endless chain of chisels that ripped out mortises in rapid bites. Or quiet ones like an augur that bored square holes as I watched it in a shop on the banks of the Ohio. Or a colossal thing I saw from a tug at the mouth of the Cuyahoga inside the Cleveland breakwater—a thing that seized a

full-sized coal car and, turning it upside down, dumped its roaring contents through a chute to the hold of a steamer as a boy would empty a hatful of nuts. Farther up the river were spidery structures that automatically emptied other steamers—mysteriously working away with no man in sight.

"We don't have machines like these," I heard again and again, for we saw a hundred others: buttonholing machines; a color-printing machine, which one of the visitors said could print four colors with one impression, "while we should need seven"; a machine for pressing wood-scrap and veneering the slab to look like solid wood: I cannot go into details. It is sufficient to say that our visitors saw machines they had never seen before. Progressive men themselves, open-minded and intelligent—I was sorry to part with them when they left us—they expressed such ideas in personal conversation that I cannot but believe the English employers in the main responsible for the backwardness of England in the matter of machines. Think of recent improvements made in printing presses. I heard of one English employer who replied when urged to "scrap" an antiquated press: "Oh, there's work in it yet. I got it second-hand about thirty years ago, and I've run it pretty steadily, but there's work in it yet."

A shipyard on the Calumet River at South Chicago was producing lake freighters with speed and precision by specialized manufacture of standardized parts. Plates were made by wholesale, punched by wholesale, riveted by machinery—in brief, simply rushed with clocklike regularity to their places in a swiftly growing ship. The machine shop was so clean and warm and brilliant in the sunlight pouring through its walls of glass that it must be a joy to work there. It was a better shop, I was told by my companions, than English shops, and the production of the plant was faster than English production. But as no lake freighters are built in England, so that broad comparisons are impossible, the point I wish to make in regard to the yard is that the youthful superintendent in charge did the managing work himself with a total office force of ten employees, conducting the plant in competition with other shipyards in the great lake shipbuilding trust at the highest standard of efficiency by personal direction. It is worth emphasis that the

combination secures economy by pitting this superintendent's executive ability against that of other superintendents in other trust yards from Duluth to Buffalo, and making him responsible for keeping the pace the other yards set. But a comparative point is worth attention. I learned that in English industries of this sort the superintendent does not work in shirt-sleeves, so to speak, but surrounds himself with a cohort of subordinates. Orders are passed from one to another with consequent lost motion, and pay-rolls are burdened with men who do other men's work for the sake of preserving a managerial dignity for which the average American employer cares not a straw. Here, as in the matter of machinery, I have the word of Mr. Mosely and the delegates, the United States is far ahead of England. Again the employers and not the unions are at fault.

The subdivision of labor at this plant and many others we saw is typically American. Our industries are highly organized. There was a vast imaginative suggestion in seeing within a week the centre near Pittsburg, whence the iron and coal of the greatest iron and coal producing country in the world converge from a hundred widely separated districts and then debouch to the world; the centre where the hogs and cattle of a continent enter in snorting herds of thousands in a day and then go out in cans, bottles, boxes and refrigerator cars, also to the world; the long lines of freight trains bearing these American products and wheat and corn from the farm of the world to seaboard ports for distribution to the hungry peoples of the world. Teeming behind the railroads and the busy manufacturing centres lies a land that is moved by a mighty fruitfulness—the gift of nature. But at the centres and along the railroads the fruits of the earth are transformed to usefulness by a process resulting from the brain-work of men. Subdivision of labor is the keynote.

At a packing-house in Chicago six girls about a table divided the simple motions that go to filling vials with beef extract. Could subdivision go further? In a freight-car works in Pittsburg one man drove nails all day at so much a nail. In shipyards, machine shops, locomotive works, clothing factories, tanneries, shoe-shops, men drove machines from morning till night which did but one thing. Step by step in every industry

from furniture making to building skyscrapers, materials slid through trained hands, or more often automatic machines, that worked some infinitesimal change, and that only. But the total of results made carloads of products with unparalleled rapidity.

Would the unions object to such methods in England? I have only the earnest words of their representatives that they would not. But observe this fact, which struck me with stunning effect when it dawned on me and I thought of the fears so commonly expressed that American unions were tending to drag our industry to the British level. *The American labor-unions are today equal in numbers to the British unions and far more aggressive.* There are nearly two million union men in Great Britain. The American unions, both in the Federation and outside, aggregate about as many. But American unions demand more than English unions; they strike more readily; they boycott, through the use of union labels—which are unknown in England—with a fierceness that appalled those English delegates with whom I talked of the matter. The English unions are hedged by law and by tradition. As one representative said to me: "We know just how far we can go—both employers and unions. You—good heavens! you have no bounds at all." True. These English labor leaders have struck me as business men; their tales of their work have been tales of executive management, of investments of union funds—sometimes in the business in which the union men are employed—of conducting coöperative stores, of serving on conciliation boards. American labor leaders have struck me as generals in the field; their talk is of campaigns. Our unions, then, are stronger, and our industries—well, the steel works I saw were months behind orders. Industries everywhere were producing feverishly. Cleveland was in urgent need of labor it could not get; Pittsburg and Chicago were groaning over the freight-car shortage; the country was swallowing the immigration grist and digesting whatever union elements—even the socialistic froth—rest in its economic body with a healthy cheerfulness to make an American glad and to force one of the Englishmen to say: "Opportunity! If I were twenty years younger I'd emigrate." The unions, I believe, are a very small part of the English disease.

Mr. Mosely says that an English workman who offers a suggestion toward improving methods of work is likely to be "sacked." Concrete examples of this sort of thing were explained to me on the ground that British industrial life is so crystalized that a foreman resents a suggestion as a hint of his incompetency likely to result in his discharge; and discharge would mean seeking for work in a country where golden opportunities are as rare as weeks of sunshine. Secondly, it was asserted—not merely by these British visitors, but by some of the most illuminating people I met on the trip, English-Americans who called on their fellow townsmen to tell tales of their experiences in the modern Hesperides—that British employers hold aloof from their men. One told of getting his first job in this country. He entered the "master's" office very timidly. "Hello," that bluff American said, "what do you want? A job, eh? Have a cigar. Well, what can you do?" and so on. The English lad's breath was taken away. So these stories ran.

"No, we would not object to American methods and American machines," said one of the union leaders. "But the employers must abandon their aloofness and talk the matter over with us, for American methods will mean that some of our men will be sacked. They must not cut day wages or piece prices and make a two-dollar-a-day skilled workman change over to tending machines at a dollar a day. But if the machines come in and the employers treat us fairly, even though inevitably some men must go, we are ready for American methods. Our conciliation boards are ready to discuss the question. If a Civic Federation is started—and I think your Civic Federation is a good thing—that will help. And if employers there will show the same spirit they show here, there will be no difficulty. The employers must wake up."

I cannot dwell further on facts I learned on this trip—from the delegates themselves, from Mr. Mosely, from the English journalists, from Mr. S. B. Donnelly, and from Mr. Marcus M. Marks, in addition to what I saw; but let me quote what one of the Englishmen said when I asked him how President Roosevelt impressed him. He said: "He sums up my impression of your country. The United States as a social force is at work evolving a man. The President is a type of that man."

VIEWS OF READERS ON RECENT BOOKS

THE WORLD'S WORK sent a letter to some of its literary friends asking them what recent books they had read with the greatest pleasure and profit, and requesting that their replies be after the manner of a personal letter. Some of these replies are as follows:

ELLEN GLASGOW:

I have just turned from my sixth careful reading of "Kim" with the feeling that I had touched the invisible spirit of the East—a feeling that nothing else has ever given me save the Sacred Books themselves. So vital, indeed, is the scholarship in this book, so flawless the force of words, that it seems to me to stand for nothing less than the outward semblance of an eternal verity. It is because of this peculiar genius of sympathy—because of the *soul* that directs and animates the art—that I would rather have written "Kim" than anything that Mr. Kipling or anybody else has done for the last ten—or even twenty—years.

I find Mr. Henry James' "The Wings of the Dove" a wonderful elaboration of a slight idea—an exquisite word embroidery of an insignificant pattern—and (to veer rather abruptly from art to nature) of Mr. Thompson Seton's animal stories I could never have enough though they should—as I devoutly hope they may—go on forever.

Of recent fiction I saw a decided promise in "The House with the Green Shutters," though I hesitate to declare it a distinct achievement. Mrs. Wharton's "The Valley of Decision" seems to me, on the other hand, to be a noble fulfilment—a work of rare sincerity and composure, and I confess quite frankly that I have enjoyed it more than any novel of the year.

TUDOR JENKS:

"Anticipations," by Henry George Wells, is alive. It is broad in view; it is the result of an imagination big enough to take a bird's-eye view of the world. You feel when reading it that petty things may be forgotten because big things are so much bigger. I believe that, whether or not we are traveling toward the developments Wells foresees, he teaches us to ask where we are bound and

if we wish to go there. So many men wear blinders that few have a wide horizon. "Anticipations" takes off your blinders. While you may shy, you will see more than the road dust.

"The Blazed Trail," by Stewart Edward White, is also living. It smells of outdoors, and while telling the life of a lumberman it never forgets the man in the lumber. White has no hesitation in following his own blazed trail, even when it leads him through riot, fire and bloodshed; but he keeps both head and heart above his mere incidents, and has produced a book that is as human as it is American, and is equally readable in a fashionable club or a bark shanty—a book for which no reader is too brainy or busy.

"An Island Cabin" is another book that has individuality and power. The author, Arthur Henry, is a homespun Thoreau—homespun, because he writes without the literary pose and doesn't leave out the very things we like to know. Thoreau makes one feel his disapproval—he forgets Shakespeare's wise saying, "Nature is made better by no mean but nature makes that mean"—and does not see that a city is as natural as a rose or a toadstool. The last page of Henry's book is a recognition of this truth, but the whole book is an application of it. Then, too, there are good episodes all through—the drowning of the wicked kitten, for instance, is a gem. The whole volume is thoughts put into writing, not writing trimmed with thoughts.

Maeterlinck's "Life of the Bee" I liked because it is prose poetry—facts where facts are wanted, and speculations in their own place. It makes one think, and treats the reader with respect. We are sick of being taught—none of us knows enough to be condescending—but we like to be led by one who knows the way.

Besides these, I'd like to say a word in admiration of the "Oxford Book of English Verse," chosen and edited by A. T. Quiller-Couch—a delightful companion for a traveling library or on one's desk at home. Good poetry is a tonic inexhaustible, and the range of this selection is from A. D. 1250 to 1900. In the India-paper edition it is a marvel of compression. Personally, I can live without a constant diet of novels.

WILLIAM STEARNS DAVIS:

Of the recent novels I have read the one leaving the pleasantest after-taste is Mr. Allen French's "The Colonials." A steady diet of Revolutionary stories led me to attack it with hesitation, but the hesitation ended with the first chapter, and I was sorry when I finished the last. It had action, literary charm, a nice balancing of characters and something more—a deep sincerity underneath all the sword-play that lifted it far above the host of swashbuckler romances which try to conceal their woodenness behind much clatter. Very different is the satisfaction given by Miss Norma Lorimer's "By the Waters of Sicily." There is a little thread of a love story, not too serious to divert from the pleasures of a most delightful journey through the island of Syracuse, Taormina and Palermo. In Mr. Stephen Phillips' "Ulysses" I think we have perhaps the high-water mark of all recent dramatic verse. If superb literary technique alone makes a masterpiece, it is here, unfortunately, the reader feels "there is one thing lacking," and that is soul. It is hard to improve upon the "Odyssey," and Mr. Phillips is not too blameworthy if he has failed. Of still different mood is Prof. William James' "Varieties of Religious Experience." It is an admirable attempt by one of the most fearless and best accredited psychologists of the age to show an essentially scientific justification for religious emotions, and to tear away the barriers which have been assumed to exist between faith and reason. A wide reading of this book would dissipate a certain phase of "unbelief" more than a myriad tracts.

C. M. FLANDRAU:

Mrs. Wharton's "The Valley of Decision," Mr. Kipling's "Kim" and Mr. Wister's "The Virginian" are the only recent novels I look forward with much pleasure to reading again. For chronological, if for no other reasons, Mr. Kipling's series of pictures is more living—less consciously "educational" than that of Mrs. Wharton. But if Mr. Kipling runs a dazzling cinematograph, Mrs. Wharton performs charmingly on the stereopticon.

The sentimental grasp Mr. Wister has on his "Virginian" is almost always beautiful, and in the really great chapters called "In the Cottonwoods" and "Superstition Trail" it is extremely moving. Perhaps it is just as well that the other characters in the book are either sketchy or frankly conventional. The fact gives one more leisure in which to adore the Virginian.

Not the least engaging trait of the humor-

ous, pathetic and altogether refreshing collection of sketches Miss Edith Wyatt has called "Every One His Own Way" is its delicate flattery of the reader's own keenness and general superiority. One reads them, steeped in the comfort of lamenting that no one but oneself is quite clever enough fully to appreciate them.

M. Maurice Maeterlinck's "The Life of the Bee" is more romantic than romance, more poetic than poetry. Only a pitying consideration for those who have not discovered it restrains one from establishing—in the manner of M. Maeterlinck himself—an apiary in the drawing-room.

GEORGE ILES:

Why do we read novels? Because they deal with that theme of undying interest, human nature. That, after all, is the apple for which we accept so much paste in the shape of scenic setting, historical properties, more or less tedious moralizing. Commend me to such a book as Prof. William James' "Talks on Psychology to Teachers," which takes up human nature by itself, its thoughts, emotions, feelings; which serves up apple without any paste. Professor James is a man of science, a man of letters and a thorough man of the world. He addresses himself to teachers; that is what we all are; if not teachers of our own children, then of the children of other people, oftenest of all the ignorant teachers of ourselves. Were it only for its supremely wise and gracious chapters on "Habit" and "Memory," this book should be in the hands of every man and woman in America. We rise from it nourished and stimulated. Apple pie is good; plain apple, sound and crisp, is better still.

A great biography is "Huxley's Life and Letters." Here is a man in whom new thought aroused new powers of expression, a man of keenest insight, of masterful will, a fighter if Nature ever made one. And yet brilliant as his work undoubtedly is, it has neither the weight nor originality of Darwin's or Spencer's. Nothing, indeed, was finer in Huxley's career than his discipleship to Darwin.

In his "Facts and Comments" Herbert Spencer

"Obeys the voice at eve obeyed at prime."

As in 1842 he inveighed against the encroachments of government upon individual liberty, he sees to-day only slavery in the rising tide of imperialism, only rebarbarization in the resurgence of the warlike spirit of the hour. And with chapters that might well be woven into "First Principles" and the "Biology" we

have glimpses of the heart of the man, unveiled before. He mourns the disappearance of the rustic plank and hand-rail as they make way for the country bridge of stone or brick. He regards with a sigh the hedges of clematis, bryony and wild hop, the roofs of thatch, the strips of greensward and wild flowers bordering the byroads, which are fast vanishing before "improvements." In a vein well worthy the author of "Synthetic Philosophy," he argues that feeling and not intellect is the weightier part of the mind: a dictum fully borne out by these latest pages of this profoundest generalizer of our time, perhaps of all time.

THOMAS DIXON, JR.:

Of books recently published "Kim" confirmed my opinion that Kipling is the great poet of the century. Of course, "Kim" is not, strictly speaking, a novel, but it is a great prose poem of epic grandeur. Its sentences echo through one's soul like the music of a grand organ touched by a master's hand. "The Right of Way," with all its faults of melodramatic and improbable situations, is still one of the most fascinating stories I ever read. It is so beautifully told one is inclined to forgive all faults. "The Bar Sinister," the story of that bull terrier in Davis' "Ranson's Folly," is the best short story I ever read. Mrs. Wiggs is the most original and one of the most beautifully clean-cut character sketches of the year. The paragraph in which Mrs. Wiggs gives the obituary of her late lamented husband in pantomime, imitating a man drinking out of a bottle, and that without adverse comment, is the richest piece of humor I've read in many a day. My household, young and old, fell in love with "Mrs. Wiggs."

But the book that moved me most profoundly was "Helen Keller's Autobiography." I confess that I read every chapter through a mist of tears, and over some parts cried like a baby when nobody could see me. That sentence where she said the feel of the roses in the New England garden was not so soft and tender as that of those that climbed over her mother's cottage in Alabama knocked me clean out! There's something about her story that finds the inmost depths of one's heart. There is infinite pathos in this simple narrative of a child's soul slowly fighting its way out of eternal night into light and love and knowledge. There is absolutely nothing like it in the literature of the world.

CAROLINE A. MASON:

In G. W. Stevens' "In India" the book of travel strikes me as having reached high-water mark. Keen observation, trenchant wit and an extraordinary power of vivid characterization combined to make Mr. Stevens the ideal traveler. This seems less a book about India than a glimpse of India itself.

In Mrs. Wharton's "Valley of Decision" I labored under the disadvantage of supposing myself to be reading a romance pure and simple. I shall read the book again when I want an illuminating discussion of eighteenth century Italy, its philosophy, politics, religion, morals and manners. As such—and this I take to be its real scope—the two thick volumes would be none the worse either for the occasional brilliant dialogue or for the intermittent action which link them to the domain of fiction.

M. A. DE WOLFE HOWE:

I have read the new "Longfellow" by Col. T. W. Higginson, and the new "Hawthorne" by Prof. G. E. Woodberry, each in the "American Men of Letters" series. One would think the easier of the two to write would be the "Longfellow." It has, indeed, the peculiar value which must come from the author's personal relations with the poet as his teacher and his friend. Yet it must be admitted that this volume will make its strongest appeal to the new reader whose studies have not yet led him to the excellent longer and shorter lives of Longfellow previously in existence. Partly, indeed, because the "Hawthorne" was the more difficult task, it may evoke a more general response. In spite of the fact that Hawthorne's wonderfully autobiographic "Note-Books" and the abundant biographical writings of his son, daughter and son-in-law are within reach of all, there is a natural curiosity to learn exactly what Hawthorne means to one of the most searching students of letters in the generation that has followed him. Professor Woodberry has put conscience and thought and a native sympathy into his undertaking. If the reader, new or old, puts down the book with a touch of disappointment that Hawthorne and his art are not explained quite so wholly as was Poe, treated in the same series by the same writer, let him remember that here Hawthorne is the theme.



A NERVE CENTRE OF BUSINESS

A GERMAN manufacturer who recently traveled through the United States for the purpose of studying American industrial methods, announced at the conclusion of his trip that the most interesting thing he had found in America was Cupples Station.

It is probable that the German visitor was right, and that in the handling of wholesale merchandise there is no institution in the world so perfectly organized as Cupples Station in the city of St. Louis. St. Louis is the great wholesale distributing point between the Southwest and the rest of the country. Its manufacturing and trans-shipping business is very large, and the plan of the city favors the centralizing of all the railway lines. Through the Terminal Railway the various lines bringing freight into the city run over a single group of tracks that lie in a depression between two of the hills on which the city stands.

Grouped about the mouth of the Terminal Association tunnel is the collection of eighteen immense brick structures which compose Cupples Station. Some of the largest wholesale concerns and heaviest shippers in the country are tenants of these buildings. The advantages they have come from the quick and economical handling of their goods. In New York City more than 30,000 trucks are employed in the movement of goods, and all merchandise must be loaded and unloaded twice in entering and leaving the city. At Cupples Station the switches from the various tracks run directly underneath the buildings and are connected with the large shipping rooms and truckways on the upper stories by a system of high-pressure hydraulic elevators. A single package of merchandise or a carload lot can be shipped from the rear of any of the buildings to any railroad point in the country with equal facility and without the expense, delay and possibilities of damage which exist where cartage is necessary.

Cupples Station occupies an area of more than thirty acres and contains a floor space of 1,500,000 square feet. Its thirty tenants represent an invested capital of above

\$25,000,000 and an annual business of more than \$75,000,000. It receives and ships more than 1,000 tons of merchandise per day, and does a greater business than any freight station in the country. The immensity of the interests represented increases the efficiency of the work done.

HANDLING GOODS FOR A METROPOLIS

THE system in operation is practically as follows: During the night cars are being delivered on the station tracks from all of the railroads, both east and west of the river. Coffees, sugars, hardware, and all sorts of manufactured articles are arriving from the East; dried fruits, canned goods and many other products are received from the far West. At seven o'clock in the morning the large force of men, constituting the Cupples Station employees, commences to unload these cars. With the system of trucks especially designed for the purpose, as many as fifty or sixty cars have been unloaded within two hours and the contents have found their way to positions in various stores.

Practically all of the incoming goods are received and piled in the respective buildings before nine o'clock in the morning, instead of coming at all hours of the day and blocking the goods that are being shipped. At nine o'clock, or even before, large trucks commence to roll out of the various stores on the upper or shipping truckways into the great freight-receiving room, where they are received and the bills of lading signed. Here the goods are assorted for station order loading, and they go out by trains over the various roads during the day. Each of the roads has a schedule hour for pulling out its train, and the firms constituting the Cupples group assort their orders and get out their goods to conform to these schedules.

It would be hard to find a busier sight than that afforded by the constant flow of trucks, the numerous elevators dropping them to the lower levels, the coming and going of trains, and the many activities of the station. Over 4,000 of these trucks, on each of which more than 5,000 pounds of freight can be loaded,

are necessary to handle this daily traffic. For goods arriving the trucks are pushed into the cars, loaded, drawn to the elevators of the various buildings, elevated to the floor where the goods belong and pulled to the positions where goods are piled, so that there is but one handling; and the same thing is true of the shipping process.

All the details, loading, unloading, arranging shipments, securing bills of lading and similar duties involved in the receipt and shipment of goods are managed by the station employees, and the cost of this work is assessed pro rata on the different tenants. Each occupant of the station receives his goods at the door of his office, and in making shipments need only place his packages on trucks in his storeroom and run them outside his door. All the rest is attended to by the station management.

Cupples Station represents to its tenants convenience and facility in shipments, economies in labor, in the operation of elevators and trucks, economies through the elimination of the expense of drayage and through the saving of waste and damage to goods in handling, and it also represents a saving in the cost of light, heat and steam, owing to the location on the premises of an electric-lighting and steam-heating plant operated by the company. The whole enterprise represents the most complete development of a typically American idea, and as such its operation is of importance to the industrial world.

Cupples Station was built up and developed into a successful business enterprise by Mr. Samuel Cupples and Mr. Robert Brookings. A few years ago, in pursuit of the educational gifts which they began to make many years since, the entire property, involving an investment of millions, was turned over to Washington University in St. Louis and it is now operated for the university's benefit.

INDUSTRIES AND TOWNS TO ORDER

LYING at the eastern base of the Rockies, almost in the centre of Colorado, is "New Pueblo"—"new" in distinction from the Pueblo of a decade ago. Ten years have brought this town such progress and such prosperity that it is called the Pittsburg of the West. Its situation has had something to do with the transformation. To the south and west are great coal deposits, the nearest only twenty-five miles away. The Florence oil field is at about the same distance. The town is a natural railroad centre. All these natural advantages have attracted manufacturing industries, and with them money and men. And this is the story of the development of most American cities.

In this recently awakened town has developed the plant of a great iron company. This main plant is the centre of a large number of secondary works and factories in Colorado and out of it, for the company controls railroads, coal mines, iron mines, telegraph lines—everything, in fact, that will make the company's product more simply and easily handled. But the works at Pueblo are the great nerve centre of the business.

Here in great factories that cover several hundred acres of ground 5,000 men are at work daily, besides 1,500 others who are making improvements and additions to the equipment. The total product last year showed an increase of nearly 325,000,000 pounds over that of the year previous. Three blast furnaces with a capacity of from 200 to 400 tons of pig iron a day are not enough. Two more large furnaces are being built. To meet this increase two ten-ton vessels will replace the present five-ton vessels in the Bessemer steel converter. The rail mill, when enlarged to handle the steel this will furnish, will turn out 1,000 tons of steel a day. Five new steel rolling-mills are building. The largest wire mill in the world is going up alongside of these—a mill that will employ 1,500 people. Another mill for steel plate is nearly completed. The tin plate mills when they are ready will give work to 900 men and women. The new foundry will have a daily capacity of 100 tons of castings. When all the enlargements are completed there will be upward of 12,000 people employed at these mills. And all is being done rapidly in the wholesale American manner of getting a result in the quickest and most capable way. The improvement will cost approximately \$15,000,000.

Two large storage lakes have been artificially made south of Pueblo to furnish water to the plant, and another is being built. Nearby a large structure that will turn out 5,000 steel wagons is being built by another company. All these mills and the auxiliary factories that are settling in Pueblo are at the very mouth of coal and iron mines. The raw material then is at their doors; they convert it into marketable shape and ship it east and west to the entire world.

So great is the demand for wrought material that with all our united industry at work it is being imported. And so, unhesitatingly, Americans build up a great new industry and a new industrial centre to meet the need.

SOLVING A SOCIAL PROBLEM

THIS company has had to meet, also, a difficult sociological problem, and it has met the difficulty in an interesting way. The

population of its employed forms a cosmopolitan army of some 75,000. These people, speaking twenty-seven distinct languages, house their families in some forty communities. The children of this varied parentage fight at school; even the sick and convalescent in the hospitals are constantly at war with one another. Doctor Corwin and his thirty-five assistants, therefore, have organized all kinds of evening entertainment. Cooking schools were established and night schools, clubs and libraries. In the club-house at Coalbasin—for they are not experimenting with Prohibition there—good liquor can be bought cheaply in small quantities. Pool, billiards and poker are allowed, and the stakes played for are limited to twenty-five cents. Everything is done to give the men in a decent way the sort of good time they crave. The result, to quote published reports, is as follows:

"Under present conditions not only are men ashamed to get drunk, but it is a matter of 'bad form,' and even of shame, to drink more than two or three times in one evening. Ordinarily the miner takes a drink on coming into the club, plays a game or two of cards or of pool, sometimes follows this with a second drink and goes home."

"Notwithstanding the low prices at which everything is sold, the club is practically self-sustaining, which is all that is desired, inasmuch as no returns on the investment are expected. Whatever profits may accrue are intended for use on improvements, extensions and auxiliary features."

To teach moderation and decency and a feeling of social good fellowship, this is not only a good thing for the men, but as well for the mills.

RIGHT RELATIONS OF EMPLOYER AND EMPLOYED

A LARGE and very well known manufacturing concern has carried out for twenty-five years a systematic plan of making merry with their employees at Christmas. Gifts are given to all, umbrellas, gloves, pocket-books, and many other useful articles. Long-faithful workers have often received gold watches instead of the smaller gift. At first the custom was easy to maintain, but when the business grew to enormous proportions it became difficult to find any place in the works large enough for the annual celebration. Two or three years ago, therefore, a large auditorium was built with a large stage, balconies, opera chairs and the complete equipment of a modern theatre, for this and other gatherings of the working force.

The idea from the beginning was not to give presents as a sort of added compensation, but it was simply the natural observation of Christmas among co-workers in a

large business. Two years ago a new plan was put into execution. The employees were the guests of the firm at a Christmas dinner, after which, in accordance with a previous invitation, they brought their children, and in the case of the young men and women, their younger brothers and sisters or other young friends, to whom toys were distributed at the close of the entertainment that had been planned. Some 7,000 toys were given away, and last year, at their own suggestion, the girls in many of the departments provided small trees upon which were placed their remembrances for friends in the same department.

Good fellowship rather than the charity or the kindness of a patron; this has the germ of the settlement of labor difficulties and the union of all for the best industrial result.

A TALENT-SAVING STATION

IN the narrow, tempestuous channel called Rivington Street, in New York, where every day and all day the tides of traffic surge heavily to and from Second Avenue and the Bowery, a little band of young men and women is conducting what Doctor Felix Adler has aptly called a "talent-saving station."

The idea of founding a music school for the children of the very poor in New York City originated with Miss Emilie Wagner, who came from the West in 1894 eager to devote herself to benevolent work in the slums. One day she attended service at the Baptist Mission and, hearing the children sing, her cultivated ear caught at once the true, musical note of the untrained young voices of the little Russian, Polish and Rumanian Jews. By the autumn of 1894 she had formed a music class at the mission, teaching in one room until the limited quarters refused to accommodate the increasing number of her pupils, and she was compelled, after a few months, to remove to a tenement house in the neighborhood, where there was more space. From a class instructed by herself, her work grew to the proportions of a school which required the service of other teachers and the administration of a committee. Teachers were discovered among the best equipped musicians in the city who readily volunteered their services gratis; while the committee consists of persons chosen jointly by the College and University Settlements, which organizations are still providing for the financial life of the school.

THE SCHOOL IN THE SLUMS

NO. 31 Rivington Street is an old-fashioned dwelling-house of the English-basement type, and though it was once no doubt a

"gentlemanly residence," it has long since fallen from grace. Inside, however, much has been done to redeem it. The walls are tinted a dull green and form a background for several good prints of classical subjects and one or two well-selected plaster bas-reliefs. The painted floors and stairways, while bare, are kept admirably clean—in fact, cleanliness forms a recognized branch of the school's curriculum. The child who presents herself at the door on opening day with unkempt hair, soiled fingers and slovenly clothing soon learns by suggestion and example the practical as well as spiritual advantages of clean hands.

There is not an inch of available space in the whole building which has been wasted, and during the busy hours of the afternoon and evening, when the public schools are "out" and the children at liberty, one may find classes for voice culture in the back basement or kitchen, a violin lesson progressing in a curtained-off corner of the cellar, pupils practising c. piano or "clavier" in the tiniest of low-ceilinged closets under the roof, while on the stair-landings and in dim passageways instruction on the "strings" is being given by "practice-teachers" to beginners, in defiance of the waves of sound which surge upon them from below, above and all around.

PUPILS BECOMING TEACHERS

THESE practice-teachers, by the way, are older children who have so far progressed in their work as to be capable of keeping a critical eye upon the very little ones who cannot be trusted to perform their exercises alone. Later, as they themselves progress, the practice-teachers are given pupils of their own whom they instruct under the supervision of a head teacher. Here we find a beginning of normal training as also of the opportunity the school is most anxious to provide—of a means of practical support for its pupils; for out of every four cents paid in to the school for a fifteen-minute lesson, the practice-teacher receives three cents, and so on in inverse ratio, until having advanced in efficiency she can claim her share of eight cents for a twelve-and-a-half minute lesson, when she has reached the limit of rates quoted by the school. From that time on she is encouraged to take pupils at home and gradually she becomes self-supporting and independent.

THE MAKING OF MUSICIANS

THE instances are steadily increasing where the parents of these little musicians, inspired by their enthusiasm and seeing a hope for the future in their training, pluck up heart of ambition and grace and buy a

piano on the instalment plan. The payment of five dollars a month comes the easier when the school sends its overflow to practise on these instruments, for even four cents for half an hour's practice sums up, and at the end of the month the profit from such rental often amounts to three dollars and a half—a substantial contribution toward the required five.

Perhaps the purpose and provision of this little school in the slums are more nearly in harmony with those of the great German conservatories than is the case in any other institution in the country. Elsewhere, pupils of acknowledged talent, who have already had ample instruction, are given opportunities to compete for free scholarships; but here the aim is to discover latent talent and, when it is found, to provide for it generously and develop it to its most perfect expression.

A NEW EDUCATIONAL MOVEMENT

AT Wesleyan University last July was held the first session of a summer school in the interest of "home science." In all parts of the country, and especially in the central West, instruction in home economics is being rapidly introduced, not only in technical schools, but in the public school, the college and the university. It is mainly for young women who are to be the home makers and who need modern science for the betterment of the home. Of the branches of science, it happens that research is now especially active in those pertaining to food and hygiene. The best organized, most extensive and most thorough inquiry in the world regarding food is that carried on by the Department of Agriculture. It is under the immediate supervision of Professor W. O. Atwater of Wesleyan. Some of the most important work upon the subject of food preparations is being done at Wesleyan by Professor H. W. Conn.

At the session of the National Household Economics' Association in 1901 a group of teachers especially requested a summer school at Wesleyan and the trustees of the university gave assent.

Thirty-seven were actually present as students. They came from all parts of the country—from Maine and from California, and even from England and Japan. The faculties of a number of technical schools and colleges, five State universities and one medical school were represented.

It seems likely that this first session of a pioneer school for putting the practical, everyday things on a scientific basis is only the first step in a great and important educational movement.



THE SECRETARY OF THE NAVY, MR. W. H. MOODY

Photographed by Frances Benjamin Johnston

(See "The New Navy at Work," page 398)

THE WORLD'S WORK

FEBRUARY, 1903

VOLUME V



NUMBER 4

The March of Events

THE larger minded, who watch the stronger currents of the world's activity and have reasons to know that American life swings into a larger era, have got good cheer from the start that the New Year has made. The tide of prosperity continues to run full at home, and we have again appreciably strengthened our position among the nations by the wise diplomacy of the Administration touching the Venezuelan affair.

The largest sums ever paid in dividends reached the owners of corporate property in January, and the largest sums ever paid in wages reached the workers who contributed to this prosperity. The increase of wages for many kinds of labor, especially of the great army of railroad men, and the profit-sharing plan put into operation by the United States Steel Corporation, indicate definite advancement in well-being. The full body of labor is as nearly all employed as at any time in recent history. The railroads have had an exceptionally prosperous time, which continues; the earnings of capital are reinvested in new enterprises that make further profits; and, if men use good judgment, there seems no reason for gloomy predictions.

Our exports are less than they were during the preceding phenomenal years, but this falling off seems hardly to be felt in our commercial life. Our home markets

continue to be larger. We built 6,000 miles of railroad in 1902—more than in any year since 1888; and most of the great railroad systems are spending unprecedented sums in improvements. The Pennsylvania road, for example, is spending more than fifty million dollars in New York, Pittsburg, Washington and other cities. These local improvements are permanent investments. And the great Western railroad systems are improving and extending their public benefits at a similar pace. The Baltimore & Ohio railroad, for example, will become a four-track road from Pittsburg to Chicago; and more than one hundred million dollars will soon have been spent by it in recent permanent improvements. Other great railroad systems are doing similar great tasks. These facts and many more like them make for the public good—they are permanent factors in the upbuilding of the country.

But it is a good time to grasp thoroughly the fundamental principle that it is the waste of capital and of labor that brings danger—the money spent unproductively and the labor that goes into enterprises that do not add to the real wealth of the community. Luxury is waste. Misdirected work is waste. Idle money or idle brains or idle muscle are waste. But the whole full volume of well-directed industry is gain.

It would be a sordid measure of life to reckon its satisfaction in sheer gain of money,

but money means the filling of our schools and colleges, the building of more houses and better ones, the advance of sanitation and convenience, the purchase of more books (good ones as well as frothy ones), the better provision for women and children and for old age—all good things that spread wider a right enjoyment of life and bring larger chances for the future.

True, we yet have (and we shall forever have) the tough old problem of preserving individual opportunity from the discouragement of great organization and concentration; but it is the particular task of our modern democracy to prevent this. It is, in a sense, unimportant that the rich get richer. It is, in fact, often pathetic, for riches won and not wisely used make abnormal and pitiful men and women. But it is of the greatest importance that the number of the well-to-do shall continue to increase, as it undoubtedly will. The most important thing of all is that we shall so build up our social machinery as to lift those at the very bottom into efficiency and independence. The time is not in sight when we can abolish poverty. But more well-directed agencies are at work than were ever before at work to prevent its perpetuation. We are learning that ventilation and opportunity are the main preventives.

The year has thus begun well for those who work efficiently and with hope and who do not lose the great highways of human progress. As for those who work not, or work not cheerfully, and who wander through undrained places, there is probably no glad year in the whole calendar of eternity.

ANOTHER STROKE OF WISE DIPLOMACY

WE owe Mr. Roosevelt and his administration thanks for many good acts of public service, but for none more than for the skilful steering of the Venezuela trouble to the Hague Tribunal, as, when this is written, it seems he has done.

It was flattering and gratifying that England, Germany, Italy and Venezuela wished him to act as arbitrator; and the American people have the same confidence in his judgment that these Governments have shown. Nor is it necessary to assume that these Governments had a sinister purpose in asking him to become arbitrator. If the Hague Tribunal had not been created, such an invitation would have been a natural procedure.

Yet if the President had yielded to their wishes and undertaken this task, he would have run the risk of misinterpretation by some Government at some time; for there are two or three simple propositions that Europe and South America find it difficult to understand. Europe will not believe that we mean forever to prevent the European acquisition of more land on this continent; or that, if we do so mean, we shall always be able to maintain this position without assuming responsibility for South American Governments. South America, on the other hand, finds it difficult to believe that we have a sincere wish for the welfare and for the integrity of the States there, unless we ourselves profit at some time by our quasi-protection of them; and what is a quasi-protection worth if in times of emergency it cannot become real protection? It is possible that neither Europe nor South America will ever thoroughly understand the position of the United States, or give us credit at all times for sincerity.

It is better for these reasons that we keep aloof as far as we can from such a controversy as this. However carefully the President's decision of the case might have been expressed, if he had undertaken it there would have been the danger that some part of it, a phrase if nothing more, would have been misunderstood by some party to the quarrel.

Moreover, the Hague Tribunal was created to serve just such a purpose as this. If it be not used now by England, Germany and Italy (all signatory Powers to the treaty that created it), when would it be used by them and for what purpose? Its usefulness in the future depends on the willingness of the nations to submit their differences to it now. The skilful and respectful way in which the President sent these great disputants to this proper court made as good a precedent for the use of the Hague Tribunal as his becoming arbitrator would have made a bad precedent for the United States. Nor was the task an easy one. It was one of those delicate, difficult matters of state that required the most skilful diplomacy—diplomacy in the new and better and American sense. By his conservative wisdom Mr. Roosevelt has well served his own country and the whole world. The Hague Tribunal has had no case that has so committed the greater Powers of Europe to its use as this case will.



Photographed by The Albany Art Union

CHIEF JUDGE ALTON B. PARKER
OF THE NEW YORK COURT OF APPEALS, WHO IS REGARDED AS A POSSIBLE DEMOCRATIC
NOMINEE FOR THE PRESIDENCY

(See "The March of Events")

CLEARING THE ATMOSPHERE OF THREE CONTINENTS

THE sending of the Venezuelan trouble to the Hague Tribunal saved, or at least more firmly established, two great—institutions, shall we call them?—the Tribunal itself and the Monroe Doctrine.

The Hague Treaty was not taken with the greatest seriousness by the European Governments. Arbitration between Governments—yes, it is excellent so long as it is a subject of academic discussion. But to use it as a method of settling serious difficulties requires a somewhat different state of mind. The first Governments to use it were the United States and Mexico, and now by the skilful use of the pleasantest international relations the Administration has sent the most important Governments of Europe to this court. This action will establish the court in the serious consideration of the whole world. Few recent international incidents have as large a significance as this incident is likely to have. An institution that was first regarded as a sentimental whim of the most absolute monarch in Europe seems sure to become, chiefly through the actions of the United States, the most hopeful agency of human progress that mankind has recently devised.

As for the Monroe Doctrine, the Venezuelan incident did two things. With Mr. Roosevelt and Mr. Hay at Washington (and strong personalities count for much even in international dealings) and with Mr. Cleveland and Mr. Olney in recent memory, European opinion is aware now, if it never was before, of the seriousness with which the doctrine is regarded by the United States. Public opinion throughout the country, too, while it strongly supported our policy of non-interference with the course that events took, would have as strongly resented the improper interference with American traditional rights—with the seizure of Venezuelan territory. In other words, the simple proposition that no European Government shall be allowed to secure more territory on the American continent became more firmly fixed in the minds of European Governments and in American public opinion than it had before been fixed in this generation. More than that, the incident made it clear to South American Governments that the Monroe Doctrine does not mean protection of them from their creditors, nor any assumption of responsibility

for them. The Venezuelan incident was so managed that it cleared the atmosphere of three continents.

THE FUTURE OF SOUTH AMERICAN STATES

EVERY South American incident like this Venezuelan trouble sets the imagination of far-seeing men at work. What is to be the future of some of these South American States? We cannot judge by the past and say that they will go on indefinitely as they have hitherto gone on, for new forces are at work in the world that are bound to affect their future.

So long as the United States offers room and opportunity for the surplus population of the Old World and chance for the investment of Old World capital, South America is not absolutely essential for the relief of Europe from the political, social and financial evils of congestion. Australia and South Africa and Canada have afforded and still afford room for English expansion; but the continental countries lack such advantageous colonies of their own. More than this, the pressure of international commerce is becoming not only stronger than it ever was before, but stronger than economists have hitherto foreseen.

Now such countries as Argentina, Uruguay, Brazil and much of Venezuela have everything that Germany and Italy, for examples, lack—fertile lands, vast opportunities and a sparse and (as a rule) industrially inefficient population. The London *Spectator* remarked the other week that the possession of any one of these regions by Germany would enable the Kaiser to extinguish the German Socialist party which gives him so much trouble. This remark implied such an aggressive foreign policy as the Germans perhaps have no wish to adopt. But the pressure of the whole organized world toward these fertile and unused territories is becoming exceedingly strong.

Now, if European immigration and trade conquer them without political complications, all right. Still South America is our own natural trading place. We need most of its products and we need these countries as buyers of our manufactures. Trade and immigration will many a time encounter just such troubles as this difficulty in Venezuela so long as these countries are ruled by revolutionists. Who, then, is to establish and to



Photographed by Gessford, New York

GENERAL FRANCIS V. GREENE
THE NEW POLICE COMMISSIONER OF NEW YORK CITY

(See "The March of Events")



DOCTOR JAMES E. RUSSELL

Photographed by Altman & Company

DEAN OF THE TEACHERS' COLLEGE, COLUMBIA UNIVERSITY, NEW YORK CITY

(See "*The March of Events*")

ensure stable government and stable industrial conditions?

The South American States themselves never for a moment forget that the price we charged for ensuring stable conditions in Cuba is the practical management of its international affairs; and there was no other proper and safe way to do that particular task. Our unwillingness that any European Government should acquire South American land has become stronger every year; but the task will in the future become even more difficult than it has hitherto been to hold fast to this determination without danger that at some time and in some way we may assume responsibility for some of these Governments—at least (as in the case of Cuba) a restriction on their international activity as a means of avoiding possible complications.

The long period of Spanish stagnation in the States of the only available continent for European relief must end at some time. Their isolation, which was once their safety as well as their misfortune, is passed. Trade will conquer them. Industry will invade them. They must come into the group of productive and buying peoples. While they are coming, the interesting question is, whether they will follow the example of Mexico or—of Cuba. We cannot permit European Governments to interfere beyond a certain point. To maintain this policy shall we be obliged ourselves to assume responsibilities that we do not care to assume?

Such a necessity does not yet seem to confront us; and there is no reason to fear that it will come if we are skilful in avoiding it. The natural course of events is the development of these countries by American enterprise and capital and trade. Such a development will enable them all the sooner to pass, as some of them have passed, out of the era of revolutions and into an era of stable conditions.

We have been slow to do our whole duty in this matter and slow to take advantage of the great opportunities that await us. The industrial and commercial development of South America is both the foremost large duty and the greatest opportunity that await us beyond our own territory. When we do this, they may all become Mexicos or greater than Mexico.

EARLY TALK OF A DEMOCRATIC PRESIDENTIAL CANDIDATE

THE darker the night the more one has to feel one's way. It is on this principle that the Democratic press and politicians have fallen to such an early discussion of a presidential candidate. The nominating convention will not convene till the summer of next year and a dozen "booms" can burst meanwhile.

Judge Alton B. Parker, of the New York Court of Appeals, has lately had the special favor of the prophets; and there is this strong practical point in his favor: For many years he has been on the Bench; and, while he has always been a staunch Democrat, he has taken no part in the factional troubles of the party. His last active participation in politics was as Chairman of the Democratic Executive State Committee in 1885. It is thought that for this reason he would now be acceptable to all factions.

Judge Parker, now in his fifty-second year, has spent most of his mature life as a judge. He was first appointed to a vacancy on the Supreme Bench of New York, and in 1886 he was elected (for fourteen years). But in 1889 he was appointed to the Court of Appeals and was elected as the chief judge in 1897.

The probability of the unexpected in politics is thus admirably illustrated. Last year it was believed that Mr. David B. Hill refused to consent to Judge Parker's nomination for Governor because he feared that Judge Parker might be elected and become too strong a presidential possibility. He was, therefore, "shelved." But Mr. Coler, Mr. Hill's Democratic nominee for the Governorship, was defeated; and now the very action that "shelved" Judge Parker is bringing him into prominence. "If he had been nominated for Governor," many Democrats say, "he would have been elected. Let us therefore nominate him for the presidency." The interesting fact about the game of politics is that every "smart" throw may be a boomerang.

Impossible as it is to forecast so uncertain a thing as the action of the next Democratic National Convention, it is an interesting sign that the party talk is more and more about so fresh and wholesome a personality as Judge Parker, and less and less about the old hacks and bosses of many inglorious and often-wrecked preliminary campaigns of the past.

THE NEW GERMAN TARIFF LAW

THE passage of the new German tariff gives the Government a formidable weapon for attack or defense in its commercial dealings with other countries. The tariff agitation was from the first aimed chiefly at the United States. Our agricultural products, which form our staple exports to Germany, will all be taxed at rates ranging from a fifteen to a twenty-five per cent. increase over the present duties; and more than one hundred important articles of American manufacture for which a German market has been built up are now subject to greatly increased duties, some of which are practically prohibitive.

American cotton textiles, which had begun seriously to compete with German fabrics, are heavily taxed, the rate running from twelve and a half to forty-five per cent., the average being about twenty-seven per cent. *ad valorem*. The duty on corn has been raised from fourteen per cent. to sixty per cent. Meat products—lard, bacon, hams, etc.—suffer increased duties, ranging from ten to forty per cent. These will largely diminish the market for these American goods. The real sufferer will be the German working-man, who has for many years largely subsisted on American meat. Copper wire and all other finished copper products and copper fabrics have a duty devised to prevent their importation. But American machinery, machine tools, bicycles, shoes and other leatherwear, office furniture and cotton goods are likely to suffer most. On some of these the new duties are as high as seventy per cent. For years there has been strong complaint by German manufacturers of their inability to compete with the Americans. The new law is expressly framed to remove this objection. The German bicycle industry, for example, has almost been killed by American competition. Under the provisions of the new law, which imposes heavy duties not only on finished American bicycles but also on their parts, the importation of American bicycles will probably cease entirely. Under the old tariff American footwear and leatherwear was rapidly becoming an important item in our trade with Germany. Scores of large American branch shoe stores were found in the large German cities and they have done a flourishing business. The provisions for the new law are such as to hamper but not entirely

to destroy this trade. Many American horses have been sold in Germany in late years at good prices. In Berlin alone three big firms dealt exclusively in them. But these dealers are competing with the Prussian Government, which owns and manages large studs, and with other German State Governments. The new tariff law taxes imported horses so high as to prevent this competition hereafter.

The method whereby the bill was passed gives a severe blow to German parliamentary government. The Agrarians carried it in its final form against the wish of the Government and against the Liberals and the Radicals. They shut off debate, and the Government was obliged to accept the bill as they fashioned it. The result is a victory of the most retrogressive element in German politics.

MARCONI'S TRIUMPH AND CHEAPER TELEGRAPHY

MARCONI'S successful experiment in sending long despatches by wireless telegraphy across the Atlantic took nobody by surprise. His preceding success in signaling the same distance practically proved the possibility of sending messages. But our lack of surprise makes the achievement no less wonderful. The question now is whether the new method will so greatly cheapen telegraphy as to bring a revolution in its use.

After all, we use the telegraph very little, because the service is too costly. Business men in towns and cities use it habitually, and newspapers, of course, depend upon it. But how small a proportion of the population ever sends a telegram, and how little is the volume of telegraphic communication in comparison with communication by mail! Wires are costly, and the development of devices for cheapening the service has been hindered by vested interests. We have yet hardly recovered from our first state of wonder that the telegraph is a fact. No man can compare the low tolls in some European countries with the tolls in the United States without a certain degree of indignation.

Perhaps, at the best, telegraphic communication by wire will always be too costly for anything like universal use. But if the wireless method should be so developed overland as to admit of cheap use, and so that "stations" should be put up in every town whereby messages might be sent to the next town for a few cents, the uses of the telegraph

would increase to an extent that we have not yet dreamed of. The possibility of this seems remote, but the most sluggish imagination can foresee a time when the present infrequent use of the telegraph will seem as primitive as the three-cent postage stamp now seems.

The limitation of telegraphy is the inconvenience of sending messages to and from the telegraph office. In this respect the telephone has a great advantage. There seems now no method of overcoming this drawback. But if the Marconi system does no more than to make transoceanic communication cheaper, it will do much. Its greatest service thus far is, of course, its service to ships. This is a positive addition of great value to the convenience and safety of mankind. And the most interesting question raised by it is its possible use in war and its bearing on the problems of coast defense.

GENERAL FRANCIS V. GREENE

GENERAL FRANCIS V. GREENE, the new Commissioner of Police in New York City (his predecessor having resigned after a year of unsuccessful authority), is a man who brings things to pass. A distinguished graduate of West Point, a soldier, an engineer, a man of affairs, a political manager, an author, yet in the prime of life, at fifty-two he has undertaken the most difficult task that he has ever had in hand; for it is easier to write good books or to organize and conduct a campaign in the Philippines than it is to infuse the proper moral quality into the police force of New York. He has, in fact, the most important military command now active in any of the many countries of the world—a command by which a great soldier and disciplinarian may make a higher and enduring reputation. And no man of General Greene's military training and experience has before held the place.

The men who make up the force are as good material as could easily be had. They prefer to be "straight." If they had been properly organized and properly disciplined for ten years they would be as excellent a police army as there is in the world. The fault has been with the "system" rather than with them. But this very fact makes the task of the new Commissioner the more difficult. To start afresh and to select and train 10,000 policemen would be an easy undertaking for a man of General Greene's experience.

But he has the harder problem of making the men of all grades under him, the law-breakers and the public all understand at once that a new régime has begun. In comparison with this the most difficult duties of organization and command are easy. The quality called for is moral force of an unusual kind—nerve, as he himself expressed it. The long-indulged law-breaking classes, the political organizations, the lethargic public, are all impediments in the reorganization.

Upon the results of General Greene's administration depends the hope for clean government in New York, and to a very considerable extent the success of good municipal government in the United States. The problem turns directly on this pivot—can the police force be kept from connivance at crime and vice and from giving "protection" for a share of the profits? It can be so kept, and General Greene's energetic manner gives promise of success. He does things and talks afterward, if he talk at all; and his plans are not discussed beforehand in the newspapers.

A PROBLEM THAT GROWS UNDER DISCUSSION

THE increasing difficulties that the Administration encounters in the making of Southern appointments emphasize several large facts.

Since the practical elimination of the Negroes from local political life their elevation to federal offices is resented more emphatically by the whites than it was before.

The so-called "Lily-White" Republican movement—to eliminate the Negroes also from a conspicuous part in the Republican party and thus to make the party more acceptable to Southern white men—has naturally aroused the resentment of the Negroes, but seems so far to have had little effect in any other way.

The troubles that the Administration has met have caused the formulation of two principles of action that divide men into two groups. One is the principle that, since the Negro is a large part of Southern citizenship, he should have a somewhat corresponding share of federal patronage as recognition and encouragement. The other principle is that the giving of offices for recognition and encouragement really means the bestowal of office as reward for being a respected Negro rather than as a means of getting the

Government's work done in every community in the most natural and simple way possible.

Thus the self-consciousness of the Negro, and the even greater sensitiveness of the white man either against the Negro or in his behalf, show that in dealing with this delicate and explosive subject no theory works. Personal tact is worth all the philosophy that can be formulated. In these recent controversies the Negroes themselves have as a rule either remained silent or have conducted themselves with more dignity than the white disputants.

Meantime, the schoolmaster, with his tools and his books, must, with patience and justice, do his work for many a year and with several generations before either the Negro or the white man ripens into a serene philosophy of action. The conviction grows stronger that the right kind of schoolmaster is worth more than all the controversialists. The matter gets worse under discussion, and the best lesson to learn from the difficulties and the controversies that fill the newspapers, is the lesson, ever worth remembering, that an ounce of the right personal conduct is worth a pound of good theory or a ton of theory that may not be reducible to just action.

THE GEOGRAPHICAL READJUSTMENT OF NEW YORK

MR. ALFRED MOSELY, who recently studied our social and industrial conditions, has declared that American efficiency is due in a measure to our solving of transportation problems. Incontestably the building of new railroads, and the straightening of existing lines, over wide expanses of territory, do finally subserve our highest economic ends, if one give the matter thought; and the present concentrated effort to make New York accessible to the rest of the nation without inconvenience means an increase of well-being to tens of thousands.

Arrangements have been made to widen the approach to the city of the New York Central railroad, to equip the trains with electric power, and to make direct connection at the Grand Central Station with the Subway. After bitter, but vain, opposition in the Board of Aldermen, on the pretext of demanding an eight-hour day for construction workmen, the Pennsylvania Railroad has at last secured a franchise for a tunnel that will carry its lines to the heart of the city, and work has

begun on it. And, in addition to the tunnel of the Long Island Railroad, now building to bring its passengers also into the city, another tunnel is building, which is designed at first, at all events, merely to connect lower Manhattan with Jersey City by trolley cars, but which, later, may offer ingress for the Erie railroad and the Lackawanna. These, with the new rapid transit facilities within and between the boroughs, will have a profound effect in a hundred ways, but mainly in the geographical readjustment of New York.

Their effect will be social. An inconsiderable few of us dwell near our work. The elevated and surface railways in New York City carry nearly six hundred million passengers a year, most of whom travel between home and business; and, with the increase in speed of transit, home and business may be farther apart. The home goes countryward, for there is truth in the maxim that at forty a man is a fool or a farmer, or both. But without cheap, speedy transit the desire for rural life evaporates in dreams; the cramped cities smother their dwellers, as New York is daily choking hundreds of thousands of country-born recruits who live in it. At present a worker must dwell in the city or suffer a martyrdom of discomfort and delay to live in the country; and the suburbs of New York have grown in prescribed directions and far more slowly than the growth of the city demands. The business space provided in new buildings in New York last year alone is estimated to offer working room for 40,000 new workers, with no corresponding facilities to permit them to live outside the growing apartment pueblos. In five years, when the Subway, the New York Central approach and the tunnels are finished, the greater City of New York homes will expand at a bound, not only into Westchester County at the north, but out through Long Island and New Jersey, as if the rivers no longer existed. The population will push a little apart, family from family, and green spaces will come between. Who would live in the city when electric trains in an underground tube will shoot one, within half an hour, without delay and with a single change from subway car to tunnel train, to a country home? This is the vital meaning of the new improvements.

Closer connection between Boston and the West and South will follow the completion of

the Pennsylvania Railroad plans, and a boom is promised to Boston as a port. Every locality on the railroads now coming to New York, from every direction, will be ten or fifteen minutes nearer to the city; and the industrial and financial capital of the nation will be connected more closely at a cost of more than \$10,000,000 to the *hinterland* it serves.

ARE THE CHURCHES LOSING GROUND?

A NEWS association in New York City several months ago counted the persons who went to church on several successive Sundays of fair weather; and its example has been followed in many towns and cities. But these counts have not, as a rule, been accepted as fairly accurate, either by the churchmen or by the critics of the churches. Many small churches, it is said, are overlooked by the census takers, and visitors are counted as regular attendants—these and many other criticisms are made. Nor is the interpretation of these counts uniform. To some minds they show a very satisfactory attendance indeed; while to others, in truth, they show a progressive decline.

So it always is and so it always will be. Every effort to measure the condition of the churches in concrete terms ends in controversy, and few definite facts are made clear. Yet a few large tendencies are practically and reasonably certain.

(1) The membership of the Protestant churches is not keeping pace in its growth with the growth of the Protestant part of the population. Doctor H. K. Carroll's annual summary of church membership (which is the best-known compilation) puts the gain at $1\frac{1}{2}$ per cent. for 1902, as against more than 2 per cent. in population.

(2) The increase in value of church property is, however, greater than the increase of membership. This is in part accounted for by the natural rise of real estate values. But the churches are at least as liberally maintained as they ever were—perhaps more liberally maintained than they ever were. Witness the great Methodist "Twentieth Century" funds so recently completed.

(3) There has been no such falling-off of church membership or of church attendance as was expected a decade or two ago when there came so general a change from the orthodox forms of faith to very much more

liberal creeds. The pew has accepted liberal opinions very much more rapidly than the pulpit, but this change of opinion has not emptied the pews.

(4) What has happened is that many churchgoers have somewhat changed their reasons for going to church. Fewer go for reasons of personal salvation; but more go from force of habit, for social reasons, and especially because they wish to be identified with the church as a great organization for practical helpfulness. Humanitarianism has grown more than ecclesiasticism, and the churches receive the benefit of the greater helpful impulse.

The Protestant churches, therefore, exert a very different sort of influence now from that which they exerted a generation or two ago; but it is a great influence yet, and it will remain great as far as men can foresee. But, whereas they once had the active coöperation in most parts of the United States of nearly all the "respectable" people, they now fall far short of that. There are many who seldom or never go to church but who are yet among the conservative and uplifting members of the community. In this sense, the churches are doubtless losing, but the loss is not easily expressed in any census of attendance.

DEFINITE PROGRESS BY PHILANTHROPY

PHILANTHROPIC gifts made in the United States show year after year a steady progression both in their volume and in the wisdom of their aims. The largest sums go for the alleviation of suffering or for work that gives promise of alleviating it. Hospitals and medical research and the charities that attend them receive larger sums than any other general purpose. This is a sane and well-balanced judgment. The strongest humane impulse is to relieve suffering, and the best application of science is to prevent it. This is sound sociology as well as good personal conduct. We may look to a time—far off but surely attainable—when bodily suffering will practically be unknown and when most diseases will be prevented; and help toward this new era of a sound-bodied commonwealth is made in large measure, if not chiefly, by private philanthropy. The Rockefeller Institute for the investigation of the causes of disease, the Phipps hospital for the study and cure of tuberculosis that

is offered to Philadelphia, the endowment of more hospitals for the crippled, to which Doctor Lorenz's visit gave such an impetus—these are examples of the fundamental philanthropy that is giving our age a great physical advantage over all preceding ages of mankind. We have traveled farther and faster along this road, in the gradual ascent of life, than along any other; and it is a good sign of the sound sense of the community that the rich continue to give in greatest volume to this general purpose.

Next to the relief of suffering comes the advancement of education. Private benefactions to promote the better training of youth give distinction to the United States over all other countries. In this great field of helpfulness there are many divisions—from the support of universities and the promotion of research to the beautification of school-grounds. The donations that are every year made to further this great aim likewise justify the accumulation of wealth; for the accumulation of wealth is justified only by its helpful use. In this wide range of aid to the man, and to the society of the future, there has been progressive good judgment. The mere duplication of colleges, for instance, is becoming less frequent, and more money goes to the better equipment of those that already have foundations.

PRECISION IN PATRIOTIC PHILANTHROPY

THE best use of money for education that can be made under present conditions has received clear formulation during the past year; and such excellent machinery has been created for its use that we have reached a new degree of precision in applying it.

Having demonstrated that the public school is the first necessity of a democracy, we yet have a very large and important part of our rural population without adequate public schools; and many rural communities have not even developed an appreciation of them. For obvious reasons there are more such communities in the Southern States than in any other part of the Union. The first public duty of the people of the Republic, then, in helping forward American life, is the development of these communities by public schools.

It is on this proposition that the General Education Board has established itself as a patriotic organization. Its main aim is to

help rural neighborhoods to build up the best schools in the world. The aim is not to build schools for such neighborhoods, but to help the neighborhoods themselves build them. This organization of successful men of affairs and of educational workers has completed its first year of work. Never did so small a sum of money produce so large a result. This Board, by spending less than \$150,000, in conjunction with its fellow-board (the Southern Education Board) and in the most cordial relations with every other agency of similar aims, has so aided the fast-rising tide of Southern opinion as to begin a revolution. It has organized public sentiment. It has stimulated it. It has not regarded its work as a charity. It has regarded it as a patriotic duty, and it has been so received. It has coöperated with forces that are already at work; for the neglected people must at last build up themselves. This Board has sought only how it may give well-directed aid to them that ask for it and that will wisely use it for giving the next generation an advantage over the present.

At the office of the Board in New York there is more information, and more accurate information, about public education in the South than can be found anywhere else about public education in any other wide area. It has definite machinery, therefore, for directing every helpful impulse and every helpful dollar. It receives from one donor a fund of \$100,000 a year for ten years; and it received during its first year an additional sum from others. Having demonstrated its value as an instrument of greater precision than was ever before used for a great national patriotic cause, its appeal for support ought to bring it such sums as no institution maintained solely by private subscriptions ever received.

It has opened up avenues wherein a million a year could be used with scientific precision for the building up of neglected communities on a foundation of perpetual growth. In the whole history of patriotic philanthropy there has never been such accurate work done on so large a scale; and (except only the relief of physical suffering) there is no other work of human helpfulness that is so wisely directed. We shall by its aid the more quickly gain the skilled and trained contribution to our industrial, social and political life that must and will be made by the capable people of our most

backward commonwealths. This work is at the very foundation of the development of our own population. It is a fundamental thing in our national life.

THE TEACHING OF HEALTH

IT is odd that the only subject which everybody admits ought to be taught to every child in the public schools is the only subject that has never been taught—namely, how to keep well. We have dallied with physiology and hygiene, and we have had calisthenics and all sorts of exercises; but there has been no general or thorough compulsory instruction in what might be called Health. The normal functions of the organs of the body and the simple methods of keeping them in healthful action is the one thing that no educated human being is excusable for not knowing. The prevention of disease and of disorder ought to be among the first lessons in every scheme of education.

Yet it is not fair to blame unduly the schools and the schoolmasters, for most American children reach maturity without parental instruction in the most elementary matters of health. We all wait till something goes wrong and then we call in the physician; and it is only just now that the physician himself has begun to regard it as his duty to do more than to set the disabled organ to work again—to prevent a recurrence of the trouble—that is, preventive medicine; and preventive medicine is a new thing. The very name shows that we have come to it by the wrong route, for prevention of disorder makes medicine unnecessary.

This little sermon in common sense is suggested by the work undertaken by the Teachers' College in New York, which henceforth will train teachers to teach Health. They will not be trained either as physicians or as athletes or as practitioners of any "system" of anything, but as capable teachers of the right care and use of the human body.

It may not be extravagant to say that this same movement is of larger possible benefit than anything that has hitherto been done in the name of education; for if it should ever come to pass that every pupil in the public schools should be brought naturally to a proper understanding of health and its relations to every other part of life and conduct, such a chance for the advancement of the human race

would be given as no considerable section of society has yet ever had. If all easily preventable physical troubles were prevented, such an addition would be made to the energy and to the good sense of the people as defies description. A merely incidental item of such social progress would be the incalculable saving of the money spent on quackery and of the waste in energy that quackery causes.

Reformers who are casting about for "new eras" in human progress may profitably turn all their energy to the support of this educational innovation. It is reducible to very simple statement—every normal human being if he be taught in childhood and if he use this knowledge, may lead a healthful life and (barring accidents) live his normal period of productive and active existence. Sickness and all forms of physical inefficiency could be so nearly banished that the ill would be no more numerous than the criminal. Then it would come true, as Huxley said, that we should look upon most cases of illness as criminal.

The public school is the best machinery for bringing such a change, and the first step is the training of well-balanced teachers who shall be in earnest but shall not have fads about "physical culture"—whose gospel shall be simply the gospel of Health.

ON THE THRESHOLD OF PUBLIC SCHOOL DEVELOPMENT

A TEACHER with as thorough a training in pedagogy as the Teachers' College, for example, requires for graduation, and with a physician's training in hygiene and physiology, though not for the same purpose as a physician, will not long work in the public schools for the compensation in money and in position that is now usually given. All the other rewards of the teacher's life must be made greater. How admirably this was recently set forth by Doctor William H. Maxwell, the Superintendent of Schools in New York City, in an address at the University of Chicago. Emancipated from clerical influences, and in process of emancipation from political influences, the teachers now need to raise the standard of their calling by raising the standard of admission to their ranks, and they need security of tenure. He classified the conditions that the profession must require in this comprehensive way:

(1) Adequate preparation rigorously insisted on. In this the State of New York has set a good example. The point is that the public school teachers themselves shall insist on the exclusion of all but the best-prepared candidates for places.

(2) Appointment and promotion by some means that shall stimulate the teacher's efforts and preserve his self-respect; in other words, by impartial examinations and probationary tests of actual working qualities, and not by "pulls."

(3) Opportunity for self-improvement and for the development of originality. "I mean," said Doctor Maxwell, "by the solidarity of teachers an organization to accomplish their high purpose under a code of professional ethics which will meet a standard of professional honor and professional duty transcending school board ordinances and statutory enactments."

(4) Reasonable financial support and secure tenure of office for the efficient.

In other words, the professions of medicine and of law and other such professions raised themselves into respectful consideration and dignified treatment at the hands of the community by insisting on as high a standard of character and of preparation as they could enforce. In a word, the public school teacher must make his calling a profession and not a mere means of livelihood.

In truth, we are just on the threshold of the development of the public school system.

A CLEARING-HOUSE FOR PRACTICAL BETTERMENT

THE American Institute of Social Service in New York makes a scientific study of the various movements and methods of social and industrial betterment throughout the world. It does this work through its collaborators, like Siegfried and Levasseur in Paris, Exner in Vienna, Max Richter and Lewald in Berlin, Luzzatti in Rome, Wavrinisky in Stockholm, Shimomura in Japan, and others. Then it turns its knowledge to practical use.

It has "commercial" members—firms employing large numbers of men and women. When such men wish to improve the condition of their employees, a request for information is sent to the Institute about the expenditure and the advisability of such an undertaking—whether the experience of others has been

successful. The bureau of information makes an individual study of each case, and gives suggestions. This has been done for some of the largest firms in the United States, and upon all sorts of subjects—pensions, sick benefits, housing, baths and the like.

The Musée Social of Paris, the first great museum of its kind, was the result of the far-sighted generosity of the Count Chambrun. Brussels, Berlin and Moscow have similar institutions. The Institute in New York aims to be a social clearing-house in America where all may go and study present-day problems in social and industrial betterment.

Some of the older cities in Europe, notably Amsterdam, Milan and Berlin, have had the forethought to establish Museums of Security. The Institute includes in its plans a similar collection—that is, the various devices and appliances for safeguarding the lives and limbs of workmen. Such a museum would show the operation and the cost of safety devices of every kind.

This interesting institution, now in the beginning of its service, has the commendation and practical help (for its aim is not to make money, and it will be long before it is self-sustaining, if it ever becomes so) of some of the foremost men and women of the Eastern States; and it ought to make a noteworthy success in a country at once so humane and so practical as ours.

THE COLLEGE DRUMMER

THE open appointment by Northwestern University of a "drummer" whose business it is to induce students to attend it is new only in its frankness. By methods usually delicate and indirect such work has long been done in behalf of most of our colleges. But the frank announcement of the appointment of such a college officer gave a little shock to the academic world.

There are two possible fields of activity for such a man. He can "drum up custom" from the preparatory schools by inducing youths who will go to college somewhere to go to his particular college; or he may persuade those who do not mean to go to college at all to change their minds. Both these forms of activity suggest the question whether we have more colleges than we need. If students have to be solicited, does the necessity of solicitation mean that there are too

many colleges, or does it mean that too small a proportion of the population attends them?

Too few youths doubtless do go to college, but this leads to the still harder question: What proportion of college-trained youth is the normal proportion in a country like ours? According to the latest report of the Commissioner of Education (1901), there were in 1900 169,936 students at universities and colleges.

Of course such a question is not a question for a statistical answer. On one side it may be said that a college training, if it be good for some capable youths, is good for all capable youths; and it is hard to say why this is not true. We have long ago passed that narrow conception of college training as an experience that fits men only for the professions. If it really develop men, it is good for those also who look to the crafts, to commerce and to industry for careers. If this view be correct, all capable youths who can afford it ought to have college training. If the training be of the right sort, giving a proper view of democratic life, this argument is sound; and it is sound alike for women and for men.

On the other hand, doubt arises chiefly because all college training is not of the right sort. Education has traveled a long way from the old narrow notion of it as a thing for preachers, but it has not yet gone the whole way to a perfect, democratic view of it. We yet talk about the danger of too large an educated class, such as Germany has. But the trouble with the superfluous army of German scholars is that they were mistrained. They were trained only for work in professions that are limited, not for productive work.

The time will come in our democracy—it must come if we are true to democratic ideals—when every capable youth will receive a college education—not in the classics nor even in the pure sciences, but in something that will give him the benefit of trained powers and a proper adjustment to life before he begins his active career. In the meantime the colleges have the task of even more fully adapting themselves to this widening conception and of persuading an increasing proportion of the population to take advantage of them. If the "drummer" be the best means of doing this in any community, he justifies his avowed activity. It is possible that a college, by holding on to its merely formal dignity, may restrict its usefulness.

HOW SMALL THE WORLD IS

AT a dinner in New York the celebrated Viennese surgeon, Doctor Lorenz, told this story:

"At Los Angeles I met at one dinner two ladies. One was a Norwegian from Bergen. I told her I knew a family named Middleton there, and she said that they were her best friends. Then I told her that I had operated on a member of that family. The other lady was from Honolulu. I mentioned a certain doctor there and asked if she knew him. 'He is my physician,' said she. And I said to her: 'He was my pupil.'"

The interesting thing about this incident is that such experiences are no longer unusual. In any company of persons who have gone about the world somewhat, similar stories might be told by almost every one of them. The number of persons who travel, large as it is, is after all relatively small, and they come to have more or less common experiences and more or less common acquaintances; and the persons who travel are likely to be the same who would naturally meet a distinguished visitor at dinner.

In fact, very much stranger coincidences constantly occur. At a chance meeting not long ago in New York of three men who live in different parts of the United States, it was discovered that every one of them had recently traveled the same out-of-the-way Southern mountain road and made the acquaintance in an unfrequented region of the same persons. In almost any company similar incidents can be told without repetition for a whole evening. The traveled world is very small; and the number of acquaintances that a traveled man may naturally have is larger than a Roman Emperor could possibly have enjoyed.

HOW LARGE THE WORLD IS

IN another sense the world is yet very large and very little known. In Finland today, a country that has sent us a considerable number of good immigrants, and that has many claims on the attention of all civilized mankind, there is a famine so appalling as to pass description. For many months news of it was practically suppressed by the Russian censorship. A cold summer ruined the crops, and floods swept away such food supplies as matured. These misfortunes came at a time when the country had lately been disorganized and demoralized by Russian tyranny. One estimate has been made that

as many as 400,000 persons are suffering for want of food. The country to whose humanity they would naturally look is—Russia; and Russian help in such an emergency is practically no help at all. If Finland lay within the region of the organized helpfulness of western Europe or of the United States, as the Island of Martinique lies, hardly a human being would be allowed to die from starvation. There are, then, two modern worlds—one consisting of those countries that are bound together, not by religious belief (for Finland is a Christian country), but by rail and wire—by free institutions and open trade. The other world is made up of those lands and peoples that modern organization has not touched; and they are as far off from us as the "barbarians" were from the Greeks.

Another instance like Finland is Andijan. A few weeks ago an earthquake killed an unknown number of persons (variously reported from 4,000 to 10,000), and a brief, belated despatch to the daily papers is all that the organized part of the world has heard of this distant Turkestan disaster.

As the time approaches when men may communicate by electricity around the globe—possibly without wires—and will trade and travel in lands whose populations are now isolated, it is well to remember that the real forces that bind mankind together are first of all mechanical. It is to swift and cheap travel and communication that we owe the distinguishing qualities of modern life, and not to creeds or formulæ of any kind. And it is pleasant to reflect that the great quality of organization which brings the Filipino into a closer relation with the rest of mankind than the Finn has yet been brought is the quality that has its freest scope and finds its strongest impulse in our own country.

A FORCE FOR SOCIAL BETTERMENT

IN its war against the sweat-shop and for humane and sanitary conditions in factories where women are employed, the Consumers' League is making steady progress. The report of the New York League at its recent convention showed that its "white list" of "fair houses"—stores selling only goods that are made under sanitary conditions and bear the label of the League—have grown from eight to fifty-two, and that new activities have been inaugurated.

In a campaign for early closing of department stores, the League persuaded three large firms in New York City to close at five or half-past five o'clock instead of at six. The agitation against Sunday opening of dry-goods stores in tenement districts has not been wholly successful, because the police will not enforce the law; but an effort made by the League in opposition to two obnoxious labor bills, one of which endeavored to remove the sixty-hour-a-week limit for women employees of more than twenty-one years of age in factories, helped to defeat the proposed measures.

The League had previously been instrumental in securing the sixty-hour restriction and also the prohibition of the employment of children under fourteen in mercantile establishments, as well as in obtaining one seat for every three saleswomen. One of the continuous activities of the League is to report to officials violations of these laws that may be discovered.

The spread of the League idea from this New York central body is shown by the roll of forty-nine leagues in eighteen States which will send representatives to a national convention in March. Forty manufactories throughout the country use the label, eighteen in Massachusetts, where the rigid factory laws make the work of the League less difficult than in other States. Naturally Boston stores lead in the national "white list." Wellesley, Vassar and four other colleges have local leagues, and the spread of the League abroad, with branches in Holland and Belgium, suggests the possibility of an international League. Much of this growth took place last year, for in that time the local leagues increased from twenty-one to forty-nine. The League is now likely to undertake the work of making a "white list" of those who sell only pure food—a crusade both against adulteration and against the production of any manner of food products under undesirable sanitary conditions.

BRAZIL AND ITS NEW PRESIDENT

BRAZIL is the largest republic in the world, except our own, and over this magnificent domain a new President, Doctor Francisco de Paula Rodrigues Alves, has been called to preside. He was regularly nominated for the office by the conservative, or, as it is known in Brazil, the "Historical"

Republican party; was peacefully elected and peacefully inaugurated. He assumed office under encouraging political conditions, for he is of the same party as his predecessor, Señor de Campos Salle, who a year ago crushed the projected revolt of the old revolutionist, Admiral de Mello, and that plotter for the restoration of monarchy and other plotters against the internal quiet of the country are now quiescent.

President Alves represents the highest type of South American statesman. He received a classical education at the colleges of Brazil, and served under the Emperor Dom Pedro II., as President of his native State, São Paulo. When the republic was proclaimed in 1889 he went into the legislative assembly and assisted in framing the Brazilian constitution, which closely resembles that of the United States. He is fifty-four years old and has been continuously in public life since he left the law college of São Paulo in 1870. A notable feature of his career is that it includes neither naval nor military service, and that he is not identified with any of the turbulent factions of Brazilian politics.

He has surrounded himself with an able cabinet. The Minister of Finance, Señor de Bulhoes, was on the budget committee of the Senate and is identified with the financial policy which has maintained Brazilian credit at a higher standard than any other South American country enjoys. The Minister of Foreign Affairs is Baron Rio de Branco, who was Minister from Brazil to the United States during Mr. Cleveland's second administration, when Mr. Cleveland acted as arbitrator in the boundary dispute between Brazil and the Argentine Republic and decided in Brazil's favor. Baron Branco has, therefore, a predilection for the United States, and may be expected to counteract the anti-American sentiment among his countrymen, who have had for some time an ill-founded suspicion that the United States contemplates encroaching upon Brazilian rights.

Problems of peaceful government confront President Alves which will test his powers. He was twice Minister of Finance, and his experience taught him the evils of a paper currency; but the planter interest, which is the most powerful in the country, is demanding more State help, even if to furnish it requires larger issues of paper money. In his inaugural address the President declared

for an increase in the army and navy, and these breed generals and admirals, and in South America consequent revolutionists. But the most important announcement of the new President was that he intends to improve the sanitary condition of Rio de Janeiro. This capital of 400,000 people is devastated by yellow fever every year from June to October, when the whole diplomatic corps and all others who can do so fly to Pteropolis in the mountains. To clean Rio so that it would be as wholesome a place of abode as Havana has become would be an accomplishment which would make President Alves's administration a model for imitation by every government in South America.

A BOOK OF THE GERMAN EMPEROR'S SPEECHES

A VOLUME of the Emperor of Germany's "Speeches" has been published (in German only, we think), and they are so far different from the perfunctory deliverances of most other modern monarchs as to arouse a more than usual interest. He is the only living king who could have delivered them or anything like them. Even if the reader will not turn to them for literature or for wisdom, by reading them he cannot fail to get a clearer idea than he had before of this remarkable man and to get light at many points on German politics.

Whether the church or the navy, education or the press be the subject, the Emperor speaks with the same positiveness. If we grant that he is sincere (and there can be little or no doubt that he is) it may be said of him that he is surer of his own mind and purpose than any other man living. The utmost positiveness of other men would seem doubt to him. He and the Pope are perhaps the only two men in Europe who really hold to the theory of the divine right. Such a fortification gives a man a confidence in himself that is well-nigh inconceivable to the modern mind. "My course is the right one and I shall continue to steer it." "Firm as a rock" is his belief that God is the ally of his House. In the same spirit he speaks of "My Church, of which I am *summus episcopus*."

Yet not all his speeches are in this tone. As a student of other lands and of all modern forces, he speaks at times with reason and humility. He does not merely deliver royal *dicta*. He sometimes explains conclusions

that have cost much thinking. Impetuous his manner always is, but it is not always the somewhat grotesque manner of an infallible king. Consider this for instance:

"Since I came to the throne I have thought much; and under present conditions I have concluded that it is better that I should be friendly than that I should make myself feared."

Again:

"With deep anxiety I have been forced to watch how slowly Germans learn to interest themselves in the great questions which are moving the world, and to comprehend their political meaning. Look round and see how things have changed in the last few years. Old empires pass and new ones are arising. . . . Changes that in old days took centuries to come about are now wrought in a few months. In this way the task set for our German Empire and people has immensely enlarged its scope. . . . Our people must make up their minds to offer the necessary sacrifices. Above all, they must lay aside their habit of seeking the highest good on sharply defined party lines. They must set bound to their old hereditary fault of considering everything as an object of unbridled criticism."

The first judgment of Wilhelm II. when, as a youthful monarch, he did bizarre and said ridiculous things—he was excitable to the point of insanity—has yielded to a far different opinion. Not only by reason of his hereditary position, but also because of his own unusual personality, he is the most important man of continental Europe. His dogged perseverance in carrying out his policies—the building up of the German navy, for instance—shows that he does not lose sight of his main purpose, however eccentric he may seem concerning lesser things. This volume of speeches is one of the most remarkable books of our time—because, being what it is, it bears the date of 1902. The divine right of a king, uttered and made manifest in central Europe in a constitutional monarchy in the twentieth century by a most versatile, vehement and interesting man—this is a thing the like of which it is doubtful if the world ever sees again.

THE GREAT METHODIST TWENTIETH-CENTURY FUNDS

THE Methodist Church in the Northern and Western States collected more than twenty million dollars as its "twentieth-century fund"; and this is an achievement that has no parallel, we think, in the whole history of Protestant Christianity. The fund was not for the regular maintenance of the church. It was an addition to the sums

collected every year for its usual financial conduct.

Nine millions go to pay debts on church property; more than eight millions go to educational purposes, and the balance to various forms of philanthropies and charities. The subscribers designated the uses to which their money was to be put. The Methodist Church South collected a similar fund of more than a million dollars.

Such a financial achievement tells a story of prosperous membership and of an extraordinary organization, and of most excellent business management by the Reverend Doctor Mills, who had the direction of the collection of the fund in the northern Church; but it tells much more than this. It shows that the church is a vital part of the community, that it is a vigorous institution, that it has a strong place in the loyalty and the affection of its people. And the disposition made of the fund is significant. One of the first thoughts of the givers was of education—and not of theological education nor of the training of any particular class of men or women—but of the support of the colleges that were planted by the church in its pioneer days and have been maintained ever since for training that has now generally ceased to have any strong sectarian bias. This is a broad view for the people of any religious sect to take. The other great purpose that the fund was given for reveals the economic soundness of this large mass of well-to-do, everyday, upright people: they wished to extinguish the debts on their church property.

The money of the sect has as a rule not been spent in buildings. It has succeeded, as well as any large and prosperous sect can, in holding on to the simple methods of work and worship, and in using its income in activity rather than in property.

The Methodist Church has suffered a liberalization of its faith during the lifetime of this generation, though it has suffered perhaps a less violent change than others. But the strong hold that it got on the masses of the sturdy folk of the country in its earlier days has not been loosened. It continues to be a primary force in their lives. The vitality of a religious faith is not easily measured in financial terms; but such an extraordinary financial achievement as this tells a story that cannot be misinterpreted.

THE UNITED STATES STEEL CORPORATION'S PROFIT-SHARING PLAN

A COMPREHENSIVE AND FAR-REACHING SCHEME,
DEvised BY MR. GEORGE W. PERKINS, TO PRO-
MOTE COÖPERATION IN A GREAT INDUSTRY

BY

ARTHUR GOODRICH

MR. CARNEGIE once said "Capital, business ability and manual labor are the legs of a three-legged stool. If one leg weakens, down goes the stool." The Carnegie Company had only two labor breakdowns, because "Mr. Carnegie," as somebody has said, "sat on top of his stool." With the formation of the great United States Steel Corporation came an increased necessity for making firm the larger structure. The result was the publication on New Year's Day of the company's profit-sharing plan.

Let us glance at the supports on which the company rests. Its property includes mines from which is taken nearly one-half of the total production of iron ore in the United States; the greatest American fleet and the sixth in size in the world, and 1,500 miles of railroad to carry the ore to the furnaces; 90,000 acres of coalfields nearby for fuel to help turn out 9,000,000 tons of pig iron a year; and great steel mills from which come yearly more than 9,000,000 tons of steel, 1,000,000 tons of rods, 100,000,000 feet of tubes and more than 12,000,000 kegs of nails and most of the woven wire and tin plate in America. Its total capital amounts to nearly one and one-half billion dollars.

In its organization each subsidiary company manages itself; it has its own president, its officers and directors. The central government is vested in the president, with a cabinet composed of three vice-presidents and two president's assistants, one looking after production, another after material, another after markets, and so on. Committees of superintendents counsel for the best result in subsidiary companies. The whole organization has followed the democratic idea as far as has generally been considered possible in industry.

The employees of the Steel Corporation number more than 168,000 men, greater than the combined forces of Meade and Lee at Gettysburg. Among the great army of workmen is organized the Amalgamated Association which caused the so-called steel strike a year ago, doomed to failure because of a bad cause and poor leadership.

It has been felt by many men who have watched the progress of the Steel Corporation, and especially in the light of the recent strike, that again the third leg of the stool would prove its weakness. Not long ago a well-known steel man said that he doubted the continual strength of "Steel" stocks because of the lack of loyalty among the men. Trouble with even the portion of the steel-workers who are unionized means lessened earnings; more than that, it means a break in the remarkable series of varied industries which the corporation has planned—a break that is most likely to come at the very time when the demands for steel in the country are so great that, with the mills running at their capacity, the steel concerns of the country would be unable to meet the need. The problem, therefore, was to strengthen the doubtful third leg. The intelligent workmen—and there is a large portion of skilled workers in the company's force—consider their own good first of all. It is sheer business. The unions are formed frankly to get as much as possible from the employer for the laboring man. The problem which the company faced was the old one of making it a better financial investment for the men to work for the company than to work against it.

Profit-sharing plans have been tried by the railroads and by many individual factories, and in no case that I know of have they proved an undeniable success. Confessed failure has

been the usual result. The general feeling about them among employers has been all the way from that of a large manufacturer who said: "No workmen want to share risks and responsibilities. They won't invest in your stock. They'll take any profit you'll give them and strike for more the day after. You've got to fight it out with them," to Mr. Lewis Nixon, President of the United States Shipbuilding Company, who said recently: "I believe that some system of profit-sharing will eventually settle all labor troubles." But if wise executives of railroads and individual mills have been unable to devise plans which will interest and bind to them in coöperative organization the comparatively few grades of workers they employ, the task of constructing a successful organization of this sort in the enormous coalition of thousandfold activities and industries which make up the Steel Corporation seems an impossible undertaking.

Start, if you will, with the miles upon miles of iron mines flanking Lake Superior, where miners cut the raw iron out of the earth; follow the ore on board the hundred and twenty ships across the lake to the Ohio wharves; see it shipped on railroads to the inferno of furnaces, and watch the thousands of men who stir the great crucible; go beyond to the coalfields which furnish the fuel, to the limestone quarries and kilns, to the shipyards on the lake shore, and then farther on to the multitude of rolling-mills, tin-plate mills, nail mills, wire mills, where men guide the clashing force of mammoth machines, roll, bend and form the metal at their will into the hundreds of shapes for the world's markets, where great sky-scrappers and ocean liners and mighty bridges are built piece by piece. You will not have seen all, but when you realize that every workman you have seen in your course—men of many nations and of nearly every trade known in world industry, is a part to be reckoned with in this Titanic organization of activity, something of the bigness of the problem of forming this inchoate mass into a permanent and loyal force will grip you.

More than a year and a half ago, George W. Perkins, a man of forty, who had started life as an errand boy and who had advanced by steady stages until he was a vice-president of one of the great life insurance companies, became one of Mr. J. P. Morgan's partners.

He had sold insurance from house to house; he had managed small and large branch offices; and he had controlled and reorganized and prodded the entire agent force of the great company, and later he had become famous in Europe as well as in America by the masterful way in which he had twisted foreign red tape and bent the will of European governments to his wish and to his company's profits. He had, in the days when he was injecting his own spontaneous vigor into thousands of life insurance agents, planned and put into practice a profit-sharing plan of a sort. He is a constructive thinker, as all men must be who achieve what he has achieved. He was made chairman of the Steel Corporation's finance committee.

The tremendous task was his of organizing into a permanent loyal force 168,000 men, whose native tongues are as many as those once about the tower of Babel, whose trades are as diverse as industry itself, who are suspicious of any plan an employer may propose, an army taught by outsiders and by some precedents of poor generalship to doubt its officers. His imagination caught immediately the stretch and sweep of his opportunity. Success would mean far more than creating a solid irresistible front for the great Steel Corporation. Success might be the beginning of a new industrial era in which coöperation might take the place of dissension, organized construction the place of organized destruction; an era in which the American industrial armies might move forward shoulder to shoulder into the markets of the world. Smaller plans of this kind had been failures, but that had nothing to do with him. His own career had been punctuated with small failures, but they had only made clear the large meaning of his successes. He went at his undertaking with enthusiasm and confidence. Plan after plan was proposed, only to reveal some fatal flaw. At last, after a year, a remarkably simple proposition was made that was approved by all of the many men with whom he consulted in the various centres of the Steel Corporation's activities. It is now in the hands of the 168,000 men for whom it was made. Here is a concrete statement of the plan:

Every workman employed by the Steel Corporation can buy a limited number of shares of the corporation's stock at a price that is now approximately the market price—the

least well-paid employees having the precedence both in the receiving of stock and in the proportionate number of shares they can buy. They can pay for the stock out of their salaries at any time within three years, in the meantime receiving a seven per cent. dividend on the total amount to be invested and paying five per cent. interest on the deferred payments. If the employee discontinue his payments before the stock becomes his, he can get back the money he has paid in and he may keep the difference between the dividend on the whole and the interest on the unpaid part. If he keeps the stock after he has paid for it and remains an employee of the company for five years, he receives another payment, as an additional dividend, of \$5.00 a year for each share. If during the five years he leaves the company, this additional bonus is paid into a fund which is divided among the employee stockholders who have remained with the company. A man who is seriously disabled, or the estate of a man who dies while in the service, receives the bonus for the years during which he worked.

Worked out in approximate figures, this is the limit of what is offered to men earning different grades of salaries. An average sum in each grade is taken.

Man earning	Investment	Result in five years
\$20,000	\$1,000.00	\$1,780.00
15,000	1,155.00	2,055.00
7,500	742.50	1,282.50
4,000	413.50	713.50
1,500	247.50	427.50
500	82.50	142.50

To the income will be added the share of the fund mentioned above. This concludes the first part of the plan.

By the second part, a percentage of the total earnings of the company will be divided among all those men who hold responsible positions—and the individual cases to whom this applies will be decided by the company—the percentage increasing with increased earnings. Using average figures again, this table will show the magnitude of this offer.

Amount divided	if earnings amount to
\$ 850,000	\$ 85,000,000
1,140,000	95,000,000
1,500,000	105,000,000
1,840,000	115,000,000
2,350,000	125,000,000
2,700,000	135,000,000
3,262,500	145,000,000
3,875,000	155,000,000

Half of the amount will be distributed in cash quarterly, a quarter distributed in pre-

ferred stock at the end of the year, and a quarter to be distributed among the men who stay consecutively five years in the service of the company, those who are disabled, or to their estates if they die in the service. The men who leave the company before the end of five years draw dividends on the stock as long as they remain, but the quarter of their profits in stock and the further dividends will be divided among the men who remain at the end of five years.

The plan in all its parts is not for a single year. If it is successful it is to be a permanent part of the company's organization. Granting its success, what are the results?

On the face of it the plan is frankly a business proposition. It is not "generous," as it has been called, at least not in intent. It is a remarkable stroke of constructive thinking, bearing, not paternalism, but, instead, a promise of a democracy in which each citizen may earn his vote.

Mr. Perkins developed the plan because he believes the tendency of modern business, as of modern governments, is toward well-ordered democratic government. He believes that the corporation can be made strongest and most irresistible in this way. To the Steel Corporation the success of the plan means a knitting together of the diverse activities into a more efficient industrial machine. It means more loyal, more enthusiastic and more permanent help from the officers and the men in responsible positions in the subsidiary companies; it means greater interest and better work from the mass of workers because they will feel that they are helping themselves by doing their work well.

These results obtained, and the increase of production and the reduction of expense that follow can scarcely be estimated. Labor difficulties should be reduced greatly. And more than all, public confidence in the company's intentions and in its earning power will be increased, and the company's stocks and securities will necessarily grow in value.

Exactly as the company, in proposing the plan, frankly stated that it did so for its own good, the employee is asking "What is there in this scheme for me?" The plan opens with an investment. That raises a doubt. But every thrifty worker, from the man in the yards getting \$1.50 a day to the president of a

subsidiary company—and it would be a pessimist indeed who did not believe that a large percentage of these men are intentionally thrifty—knows that to be able to lay money by where it will bring him interest of from twelve to twenty per cent., and where, further, he can get at it in case of need at any time, is an unusual opportunity. To the men holding responsible positions there is not only the new incentive of working for a concern in which they are part owners, but, as well, the promise that if they are able to increase the company's earnings they will share the profits they earn. And their added endeavor not only increases the value of their stock but also the value of the stock which the miners of Lake Superior and the freight brakemen on the railroad and the bookkeeper have bought. To the thousands upon thousands of men who have no responsibility except their daily task is opened the safest way of saving money—saving it before they receive it, an investment of their savings where they receive four or five times as much interest as they can get elsewhere, and a sense of ownership of a small part of the great concern they serve—a feeling that develops a man's dignity and responsibility as few things do; and beyond all this, an increased reason, from the part of the plan that divides profits among men who hold responsible positions, why they should grow into these responsible positions themselves. And just as the men in responsible positions by their more effective work increase the value of the day laborer's investment, so the greater efficiency on the part of the day laborer increases the value of the superintendent's investment and the profit he will thus be enabled to share.

There is still another party to be considered in this plan—the Amalgamated Association of Steel Workers, headed by Mr. Shaffer. One labor leader has already announced that the plan is aimed at the union. He is undoubtedly right in so far as the union means labor disputes and the tying-up of part of the corporation's mills. But general public support which unions have received in their belligerent attitude toward capital has come only when the demands have been for justice and fair treatment. Can the unions expect support for such an attitude in the face of so manifestly fair an invitation to the workers to make the company's interests their inter-

ests? Putting the question back to the individual worker—and it is to him that the labor leader must look for orders—it resolves itself merely into whether the company offers him a better bargain than he can get through periodical strikes. The union to get better conditions for the worker; in that the workman and the general public have a personal and genuine interest; the union as a fetish, counseling antagonism at whatever cost, influences neither public opinion nor the intelligent workman. More than this, by the very terms of Mr. Perkins's plan, a man who subscribes for stock and, before payment is completed, leaves the company's employ, loses nothing. In fact, he gains the difference between the dividend on the stock and the interest on the amount he has not paid in. It will be interesting to learn how much stock is subscribed for by the men earning from \$500 to \$2,000 a year. Mr. Perkins said to me in regard to this side of the plan's results: "We are not offering anything to the union or against it. The plan is for our own employees as individuals. It is, I think, fair from every point of view. It binds no one."

It is too early to gage the success or failure of the plan. During the first two days after it was published 600 men in two Pittsburg mills subscribed to it. Already there are applications for all the 25,000 shares offered, among which was Mr. Schwab's for his sixty shares. Real success will depend, however, on how many of the rank and file who make up so great a proportion of the 168,000 employees invest in the steel stock.

It may take years to realize the highest success at which the plan is aimed, but if it is attained then Mr. Perkins and his associates will have created a precedent which is as significant as the formation of great corporations or powerful labor-unions. Yet it is, it seems, the natural development of industry in a republic. With the coming of great corporations, admitting their occasional abuses, began the lessening of the old autocratic government of industry. With the rise of labor organization came the demand of the mass of the workers for more just, more satisfactory conditions. With plans like this of Mr. Perkins and his associates is promised the beginning of a mighty democracy of industry in which every thrifty workman of whatever grade is a citizen.



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THE NEW NAVY AT WORK

HOW THE TYPICAL SHIPS ARE MANNED, EQUIPPED AND ARMED—THE LIFE OF THE MODERN AMERICAN SAILOR—THE COMPLETE ORGANIZATION ON BOARD SHIP AND IN THE FLEET—PERFECTING THE SUBMARINE BOAT

BY

LIEUTENANT COMMANDER ALBERT GLEAVES, U. S. N.

(In command of the U.S.S. *Mayflower*, Admiral Dewey's flagship in the recent naval maneuvers.)

THE primary purpose of the Navy is to defend from the aggressions of any foreign enemy our 13,000 miles of coast line and the more than twenty centres of population adjacent to it; to protect in time of war our commerce on the high seas, and in peace times to carry the flag as an expression of good will into the ports of other nations, and to care for the interests of the United States in every part of the world. To do this Congress has built a fleet composed of all sorts of craft but in which each craft has a certain definite purpose and duty. The battle-ship is to fight and not to run, to give and receive punishment; the cruiser must not only fight other cruisers and capture and destroy swift merchantmen, but she must have speed sufficient, if need be, to run away from a more powerful adversary; the ultimate object of the torpedo boat is to destroy both battle-ship and cruiser; and of the torpedo-boat destroyer to wipe out the torpedo boats;

and finally, the mischievous little submarine boat has, its advocates maintain, a destructiveness that will revolutionize naval warfare.

In less than twenty years Congress has



A RAPID-FIRE GUN



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THE SCHOOL SHIP *ST. MARY'S* COMING INTO PORT

built a fleet that has lifted this country from below the horizon of South American navies to the fourth in rank of great sea powers—England, France and Russia alone standing ahead of us. As the work of creation is still in progress, we may hope to hold our place,

but Germany's navy is being rapidly enlarged. In 1898 the United States Navy had grown from a motley collection of worthless marine curiosities which swelled the navy list in 1882, to an efficient but small fighting force composed of four first-class battle-ships, two armored cruisers, sixteen cruisers, fifteen gunboats, six double-turreted monitors, one ram, one dynamite cruiser, one despatch boat, one transport steamer and five torpedo boats. In addition to these were 123 colliers, yachts and other auxiliaries purchased for service during the war with Spain. In November, 1902, the fleet had been increased by five battle-ships, nine cruisers, fifty-nine gunboats, twenty-two torpedo boats and one submarine boat, representing an annual increase in five years of 54,000 tons. According to the last report of Rear Admiral Bowles, the Chief Naval Constructor, when the vessels already authorized are completed we shall have a total of 286 vessels of all classes fit for service, and this will include nineteen first-class battle-ships and nine armored cruisers. In 1882 the enlisted force of the navy was 8,024 and the total number of officers 1,817. In 1898 the enlisted force had been more than trebled. When the men provided by the last Congress are enlisted, the total force of men and boys will be 28,000, while the number of sea-going officers of all grades is 1,795.

The marked discrepancy in the expansion of the number of officers emphasizes what has recently been aptly termed the navy's greatest need. That involves a long discussion; but it is an interesting and significant fact that



THE HOLLOW SQUARE IN RIOT DRILL

A naval brigade ashore



LANDING DRILL DURING A SUMMER CRUISE

on November 15, 1902, the percentage of line officers on shore duty was only 18.6.

An English writer has recently described a battle-ship as the last word that mechanical genius, naval construction and cash payment can say in aggressiveness. From fighting-top to double bottom, from ram to sternpost, she is the most complicated machine the mind of man ever conceived. There is scarcely a trade or an art that is not represented in her building. She is a house that must be lighted, ventilated, drained, and, last but not least, painted; and it is an astonishing fact that to paint a battle-ship requires 150 tons of paint. She is a fort that must carry guns of heaviest calibers for fighting other battle-ships; guns of medium size for piercing the comparatively thin protection of armored cruisers; scores of rapid-firers for protecting herself against torpedo boats, and even a battery of small Colts for picking off sharpshooters and exposed men. Above all, she is also a ship to be taken to sea, to make passages from port to port and long ocean voyages. Moreover, she is a hostelry in which there are 700 men who must be clothed, fed and housed, and for whose use there is provided an ice plant having a capacity of three tons of ice per day and evaporators that daily produce 16,000 gallons of fresh water; there is also a bakery and an enormous kitchen for cooking. Besides the ponderous main engines of more than 16,000 horse-power, there are nearly one hundred auxiliary engines and about the same number of electric motors. The boilers, with their 46,000 square feet of heating surface, must not be forgotten, nor the coal bunkers, which, in the *Oregon*, for instance, have a capacity sufficient to steam that vessel a distance of 5,500 miles without recoaling.

The main offensive power of the ship lies

in her heavy guns. The *Louisiana* class, the latest type of battle-ship, two of which were authorized by Congress last session, will be able to deliver from her twelve-inch guns every ninety seconds or less a total weight of metal amounting to 3,400 pounds, moving



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U. S. TRAINING SHIP *NONONGAHELA*



INSTRUCTION IN SWORD DRILL.

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at the enormous velocity of 2,800 feet per second, with a total muzzle energy of 184,984 foot-tons. The battery of the *Louisiana* comprises four twelve-inch guns each weighing fifty-two tons, eight eight-inch and twelve seven-inch, besides a secondary battery of twenty guns. The heavy guns are mounted in pairs in turrets weighing 500 tons each, which revolve as smoothly as a swivel chair. The shot, weighing 850 pounds, and the powder, which weighs half as much again, are brought to the breech of the gun from the

magazines forty feet below, and are loaded as easily as a boy loads his air rifle.

Around the ship on the outside is bolted the armor belt—nine feet three inches in width, varying in thickness from eleven inches amidships to four inches at the ends—to protect the precious engines. More than this, at each end of the engine and boiler space there is a solid steel wall a half-foot thick; and over all the engines, extending from bow to stern, is a curved nickel-steel roof, two and one-half inches thick at the sides, called the protective

THE CALL FOR BREAKFAST
On board the *Buffalo*

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THE TRAINING SHIP *HARTFORD* LEAVING PORT

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OUR NEWEST BATTLESHIP—THE *MAINE*

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BATTLESHIP *IOWA* GOING INTO DRY DOCK

deck, which is situated near the water-line and covers the magazines, dynamo room and steering engine. In other words, the underwater portion of a battle-ship is an invulner-

able steel box upon which the upper works are constructed.

The most interesting of all the numerous divisions of a battle-ship is the conning-tower,



THE *MAINE* AS SHE LOOKED WHEN COMPLETED
In dry dock at the Cramps

Photographed by E. F. Keller



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" WHEN THE GREAT GRAY SHIPS COME IN "

The return of Sampson's fleet from Santiago



TORPEDO BOATS AT FULL SPEED

Copyright, 1900, by Enrique Miller

The H'inslow and the Porter

a steel cylinder whose walls are nine inches thick. Situated above and just abaft the forward turret, it is high enough inside for an average-sized man to stand erect, and large enough to accommodate three or four persons without crowding. It contains the battle



OFF FOR CUBA

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The Texas leaving the Navy Yard at the outbreak of the war



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THE TORPEDO BOAT MORRIS

steering wheel and means of communicating to all parts of the ship and battery. If the captain wishes to fire the guns at a certain range, he presses a button and the desired range shows up at every gun. Similarly the kind of powder and projectiles and the bearing of the enemy are indicated. The engine-room, the torpedo rooms and the steering engine-room are all connected with the conning-tower through a central station situated down below the water-line.

After construction comes equipment, and the quantity and quality of the stores that are supplied are stupendous. As soon as a vessel is commissioned, the stores which for months have been preparing are passed down in streams from the storehouses in the navy

yard, and every imaginable article from a dust-pan or shaving-brush to a seven-ton anchor or a searchlight, may be found in the allowance tables.

The interior communications of a large ship consist of voice tubes, telephones, range indicators, engine-room telegraphs, call-bells, automatic fire alarms—the whole forming a



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MEMORIALS OF THE CIVIL WAR

Shot-marks on the *Nahant*

LITTLE BUTTERCUP

A bumboat woman on board an American war-ship

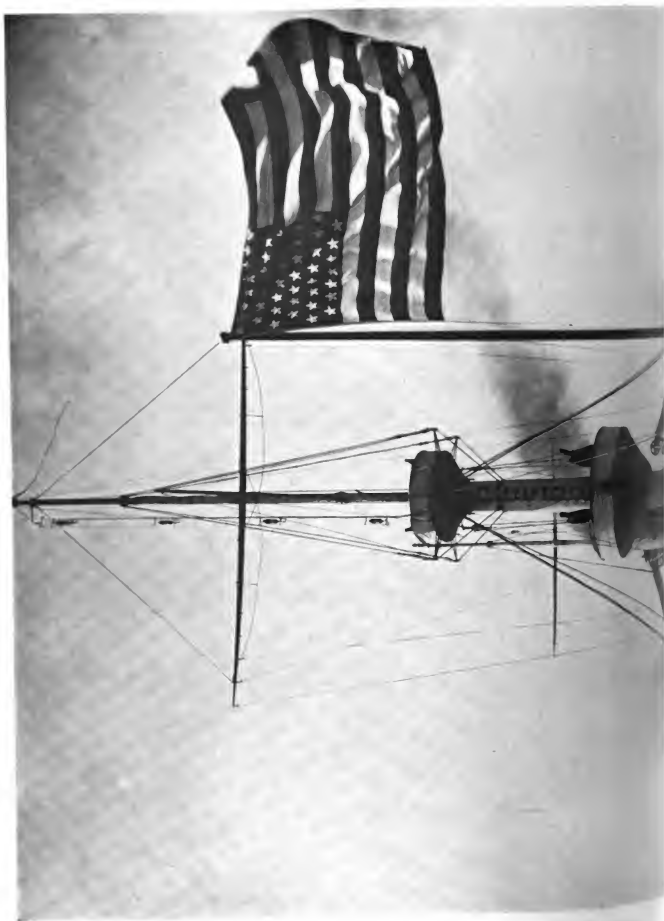


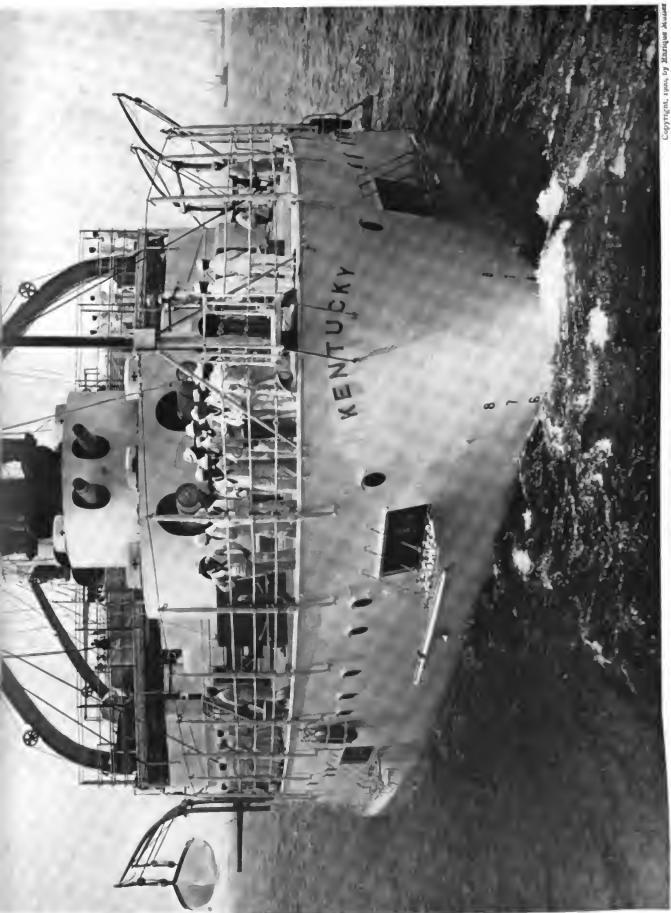
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RECEIVING SHIP NIPSIC AT BREMERTON,
PUGET SOUND

complete system by which all parts of the ship are connected. As to exterior communications, wireless telegraphy apparatus will probably soon be added to every ship's outfit. Communication by means of carrier pigeons and balloons has been abandoned. Such is the house which was built for Jack.

Over the vast establishment rules the captain in supreme and isolated authority. All his accomplishments must be those of the seamen, for he directs the movements of the ship in all evolutions, and his decision upon all





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THE BATTLESHIP *KENTUCKY*

Leaving the North River for a cruise



IN CAMP

professional points is final. His responsibility at all times is grave and exacting. In time of war it will strain the stoutest nerves; in the hour of battle it is nothing short of appalling, when he stands alone in his conning-tower, having control of all the tremendous forces lying latent in his ship only to be released at the proper moment by a touch of his hand. He is the guiding spirit of an enormous projectile of 15,000 tons that rushes through the water at a speed, it may be, of fifteen knots, and he knows that the slightest mistake of his head or heart may mean a national disaster.

But besides being the naval and military chief of the establishment, he is a lawyer—a

kind of justice of the peace, as it were, who holds court every morning, investigates reports of misdemeanors, and assigns punishment to the guilty. The delinquents are brought to the "mast"—the quarterdeck—with their accusers. Both sides are heard and swift judgment usually follows. In this capacity it will be noted that the captain is court, judge and jury. Not infrequently he acts as clergyman, and as such is the bishop of his diocese, acknowledging no ecclesiastical superior, reading the service on Sundays, officiating at the burial of his dead, and in the old days occasionally marrying lovers.

He always messes alone. His generous quarters are entirely separate from those of



STRIKING TENTS AT CAMP HIGGINSON, NANTUCKET

the other officers, and at the door of his cabin stands a marine sentry day and night, and none may enter without first being formally announced. When he comes on deck to leave the ship in uniform, or when he comes on board, he is escorted to the side by the execu-

Next in rank to the captain—"the Old Man," as he is irreverently called—is the first lieutenant or executive officer, usually a lieutenant commander and the next in line of succession to the cabin. His shoulders must indeed be broad and his temper serene as



THE INDIANA IN THE ICE

Illustration by George B. Stutz

tive officer and officer of the deck, the guard is paraded, four boys attend at the gangway, the bugler sounds the silence, and every one on deck stands at attention as the boatswain pipes him cheerily over the side.

Italian sunshine. To him, as the captain's representative, everything is first referred, and he must listen to the complaints and requests of 600 or 700 men, while at the same time he organizes and drills the ship's company



SAILORS OF THE KEARSARGE DRILLING

Copyright, 1902, by Enrique Mallat

and cares for the ship, inside and outside. As a rule he is a "ship-keeper," going ashore but little and giving all his attention to the duties which never cease. He is president of the wardroom mess and presides at all functions in the wardroom, where all the senior officers mess together. The midshipmen, staff officers and clerks have a separate mess in the junior officers' quarters ("gunroom," as it is called in the English navy), and the warrant officers, which include boatswains, gunners,

carpenters and machinists, have still another mess.

The wardroom is the scene of many enjoyable entertainments, for in spite of the hard and fatiguing drills of a day's work, dinner—usually at 6:30 or 7—is the feature of the twenty-four hours. Then, for the time being, care and worry are forgotten. On Saturday nights comes the time-honored toast of "Sweethearts and Wives." The president of the mess raps on the table, and



A TYPICAL CAPTAIN'S CABIN

Captain Reeder on the *Hartford*

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A SQUAD FROM THE *KEARSARGE* AIMING A FIELD PIECE

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when all are silent he asks: "Gentlemen, are your glasses charged?" and then, "I give you the toast, 'Sweethearts and Wives, God bless

them,'" and the toast is drunk standing. In the Dutch service there is a favorite wardroom song that commemorates the deeds of their

A GROUP OF BLUEJACKETS ON THE *BROOKLYN* WITH THEIR MASCOTS

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A SAILOR'S VARN



READY FOR THE FANCY DRESS BALL

great naval hero, Pete Heine. Pete Heine, it seems, was a very small man who, as every one knows, rose to great fame. When the song is started, usually after dinner, the officers get down on the deck, with their heads barely above the table, in imitation of Pete's diminutive stature, and begin in a low voice the first verse. Then as the song proceeds they gradually rise, making louder each time the refrain, "Pete Heine, Pete Heine, der

kleine Pete Heine," until finally there is an uproarious chorus, with every one standing on his chair.

The other officers of the wardroom are the watch officers, surgeon, paymaster and marine officers. The officers' quarters are comfortably but by no means luxuriously furnished. As a rule, they are sufficiently commodious, well lighted and ventilated. A fine library is supplied by the Government.



A SATURDAY HALF-HOLIDAY IN THE NAVY

An afternoon dance on a receiving-ship for apprentices at Newport



USING THE NEW RANGE-FINDER

The Government also furnishes the cookery, glassware and table linen, but does not, as is generally supposed, pay the mess bill. In most if not all foreign services, commanding officers are allowed a certain amount of "table money" for official entertaining, an English admiral's allowance being, I believe, \$6,000; but in the United States Navy all such expenses must come out of the usually



A MORNING SHAVE ON THE TEXAS

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THE OLD RAM ALBATROSS

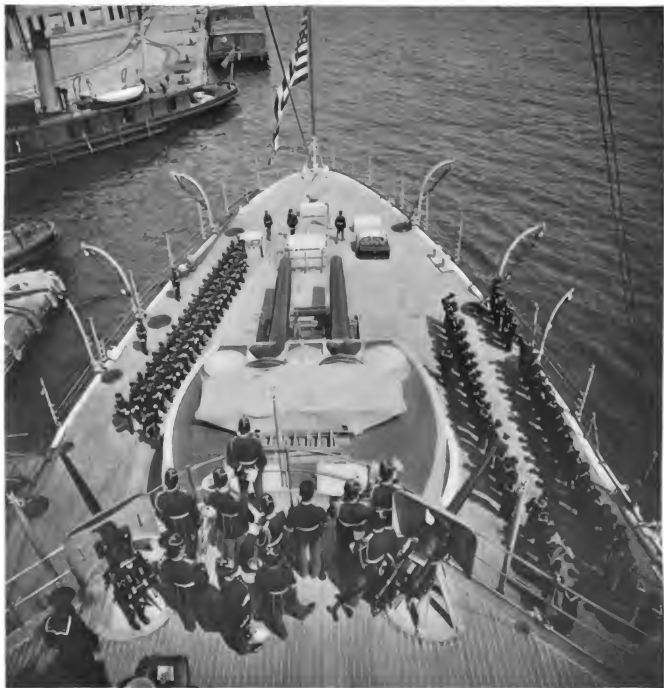
lean purses of the officers. And in some ports it is a very considerable item.

Forward of the mast, as it is termed, lives the "man behind the gun." The enlisted force of the navy—nearly 25,000 men—contains many foreigners, but their number is rapidly diminishing under new systems of recruiting which require all the men now

enlisted to be either citizens of the United States or to have declared their intentions to become such. According to Secretary Moody's report, eighty-nine per cent. of the enlisted force are now citizens and seventy-six per cent. are native born. We shall soon have an American navy of Americans. A few years ago the majority of our bluejackets were Scandinavians and of other European stock, and it was something more than a mere joke when a lieutenant once hailed the deck of one of our men-of-war with "If there is any man in the starboard gangway

who can speak English, lay aft." Indeed, the number of foreigners on our ships was so notorious that when the war with Spain was threatened not a few Continental papers prophesied with glee unholy that at the first crack of a gun our foreigners would jump the ships and our navy would be left hopelessly short-handed. The prophecy, of course, like many others, failed entirely, for the aliens who bore arms for us and with us were truly loyal.

In the organization of the enlisted force the men are classified under four different



SUNDAY MORNING ON THE ALABAMA

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heads: seamen, artificers, specials and mess-men; and these again are divided into two groups which separate the petty officers from the men of inferior rating, and each of these groups is subdivided into three classes. At the head of the organization are the chief petty officers: master-at-arms, who is chief of police, so to speak, and is popularly known

Chief petty officers wear visored caps, double-breasted sack coats with brass buttons, and white shirts. The last is a change that comes a little awkward at first to those whose thumbs are rough and tarred. The device that denotes their rating is embroidered on the sleeve, which is further ornamented by red chevrons, one for each enlistment. These



THE BATTLESHIP KEOKUK

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among the men as "Jimmy Legs," boat-swains' mates, gun captains, quartermasters, machinists, electricians, commissary stewards, bandmasters, etc. Their pay per month varies from \$70 for chief machinist to \$30 for a gun captain. The chief electrician receives \$60 per month and the bandmaster \$52.

men have all won their linen collars by hard and faithful service on deck or in the engine room—except such specials as the yeomen, stewards and musicians, for whom no previous sea training is necessary—and as a rule they have nearly as many privileges as officers. They are allowed a separate and independent

mess, and in large ships are provided with staterooms. They are a fine body of men, and form a connecting link between the commissioned officers and enlisted men, with the latter of whom they are constantly associated. The third-class petty officers wear the ordinary sailor uniform and their pay ranges from \$30 to \$60 per month. Then come the bluejackets—that is to say, the seamen, ordinary seamen, landsmen and the fire-room force, and also the messmen, the latter including the officers' and ship's cooks, bakers, stewards and mess attendants. The pay of a seaman is \$24 per month, a fireman \$35, and a mess attendant of the first class \$22.

In addition to these men there are also marines—the sea-soldiers—whose presence on board ship is deprecated by some, but whose services can ill be dispensed with. They live and mess together in a part of the ship assigned to them, and do duty as sentries. Marines have always been included in the ship's force, and it may be remarked that their corps antedates both the army and the navy. Now when these people are assigned to a ship they are divided into two watches, starboard and port, and these again into divisions. Each man has a number, a station at fire quarters, at battle quarters and in boats; and in order that there may be no excuse for a man's not knowing where he belongs, "station" bills are posted under glass covers, where the recruit or veteran may constantly refresh his memory. So much for the ship's company.

At five o'clock or earlier, according to season, all hands are turned out. The ship's cook, who has been called much earlier, has started the galley fires and prepared the coffee. Ten minutes are allowed for lashing up hammocks and stowing them, and twenty more for coffee and a smoke. Then comes "turn to," and the day's work begins before the sun has reached across the skyline. The first thing is to scrub down the decks and clean ship. Except when the weather is too cold, every one is required to do this in bare feet. There are few things Jack loves better than playing in water; and the splashing and the holystoning go merrily on for an hour or so, alternated with scrubbing clothes, perhaps, or hammocks; then the clotheslines are triced up, the decks are washed down and dried, the rigging is hauled taut, and the ship is tidied up for "colors" at eight o'clock.

In the old days the raising and lowering of the flag was not regarded with the form and ceremony that today mark it on all ships, whether tug or battle-ship. At five minutes before eight the bugler sounds the "first call," and the quartermasters at once take their station by the flag and jack. At one minute to eight the orderly at the cabin door reports to the officer of the deck "Eight o'clock, sir"; the time is then reported by him to the captain, who replies "Make it so"; and then the bell is struck, the bugle "sounds off," every man stands at attention on deck fore and aft and salutes as the flag touches the truck, while the band on the quarterdeck plays the national air. So ends the morning watch as the crew are piped to breakfast.

The new navy ration, for which Jack is allowed thirty cents per day in addition to his pay, is as follows:

One pound and a quarter of salt or smoked meat, with three ounces of dried or six ounces of canned fruit, and three gills of beans or peas, or twelve ounces of flour; or one pound of preserved meat, with three ounces of dried or six ounces of canned fruit and twelve ounces of rice or eight ounces of canned vegetables, or four ounces of desiccated vegetables; together with one pound of biscuit, two ounces of butter, four ounces of sugar, two ounces of coffee or cocoa, or one half-ounce of tea and one ounce of condensed milk or evaporated cream; and a weekly allowance of one half-pound of macaroni, four ounces of cheese, four ounces of tomatoes, one half-pint of vinegar, one half-pint of pickles, one half-pint of molasses, four ounces of salt, one quarter-ounce of pepper, and one half-ounce of dry mustard.

From breakfast until sunset, with the exception of one hour in the middle of the day for dinner, the greater part of the time is spent in drill. At nine o'clock the crew fall in at the guns; and after a rigid inspection of their uniforms and their general appearance the drills begin. These consist principally of exercise with the great guns; but much attention is also given to pistols, broadswords and infantry. The turret-gun drills are especially interesting. The accurate pointing of a twelve-inch gun under cover is an art attained only by long and faithful practice, and as the chief object of the gun is to hit, and the chief object of the ship is to carry the gun, it is obvious why the maxim of the navy today is "Drill, drill, *toujours* drill."

Since 1812 our sailors have had a tremendous reputation as marksmen. The gunnery which destroyed the *Guerriere*, *Java* and

Hornet astonished the world, and it is a happy fact that the reputation acquired then has been maintained by succeeding generations of bluejacket gun-captains, notwithstanding the mortifying fact that at Santiago only four per cent. of the shots got home. The result of that action pleased the nation, however.

And our gun-captains ought to be skilled, if an almost unlimited amount of ammunition for target practice means anything at all. The money value of ammunition so expended by a battle-ship is startling. "Within a period of twelve months," reports Admiral O'Neil, "three battle-ships of the North Atlantic Squadron alone have expended \$250,000 worth of ammunition." And he adds: "It is quite evident that some tangible results ought to be apparent from so large an expenditure for training purposes, for even the richest nation must count the loss of the maintenance for its naval establishment, and the country has a right to demand reasonable returns in the shape of increased efficiency for its outlay."

Once a month, usually on the first Sunday, all hands are called on the quarterdeck and the executive officer reads the "Articles of War," after which the paymaster's clerk calls the roll, and as each man's name is called he takes off his cap and passes in front of the captain and all the officers, who are assembled aft in full-dress uniform.

But the sailor's life is not altogether one of hard work, and on the whole he has a very good time. Dancing, gymnastics, fencing, boxing and boat-racing fill his leisure hours. His natural fondness for pets is proverbial, and there are few ships without a mascot, be it a goat, dog or Dennis the pig, which serves to lighten the hours of the dull watches at sea. Many stories are told of the prowess of ship's pets, at night on the forecabin, when the hammocks are down and the pipes lighted. One man spins a yarn of a cat that was born in an old boiler, cruised 50,000 miles in one ship, established a great reputation as a fighter in all parts of the world, and finally ended his adventurous career on the coral reefs of Samoa. Another tells of a monkey without ears or tail, with which he sailed in the China seas, whose fondness for liquid paint produced periodical attacks of blindness. Then there is a story of a dissipated dog who never lost an opportunity to get

drunk, and who always recognized the bugle call for the gig and invariably ran to the gangway when it sounded, to go ashore in state with the captain. But the best of all is the one of the pet bear who chased a young officer up the mizzen rigging. Fortunate indeed is the animal that falls into the hands of a sailor.

"The sailor-man has his vagaries," once said the present Bishop of Shanghai over the coffin of a sailor who had taken his own life, "but he is the tenderest-hearted creature into which God ever breathed the breath of life."

As a devotee of Terpsichore Jack is at his best at the annual ball which the ships of the North Atlantic Squadron are wont to give in New York while refitting for the winter cruise. A hall is hired on shore and elaborately decorated; ornately engraved invitations are prepared, and everything arranged for an entertainment absolutely regardless of expense. When a sailor-man invites his friends to be his guests only the best of everything will suffice. The ball is invariably opened by a grand march, and the captain and his "lady" are always invited to lead. No dancing or privateering is allowed until this function, which is impressive and dignified, is over; but the moment it is finished the fun begins, and there are few sights more attractive and inspiring than one of these sailors' entertainments.

The crew are encouraged in athletics; ships are supplied with a fine gymnasium outfit, including swords and foils, and many of the men become expert in the scientific art of self-defense. Besides these direct means for physical development, there are football and baseball teams, and many a good game is played in the intervals of shore leave.

Of course the natural sport of a sailor is boating, and in a pull-away race our men are difficult to beat. Many years ago, in the harbor of Rio de Janeiro, an international boat race was arranged in which seven nations were represented. Our ships, the *Hartford* and *Essex*, entered three boats, and each won the first prize of its own race. The trophies were brought on board by a committee headed by Saldanha de Gama, afterward greatly distinguished in the revolution of '93.

Theatricals, songs and stories are specialties of the gun-deck that must not be forgotten. As an actor, Jack shines best on the minstrel

and vaudeville stage; if he is not always a humorous actor, he is at least a sincere one.

As for the sailors' songs, the real thing is no more like the popular idea of a forecasket chantey than a hornpipe is like the two-step. "Strewing Flowers Over Darling Mother's Grave," and similar airs of a pathetic, almost doleful nature, are most in favor. Dibdin's ballads are unknown, and the stirring old battle-songs of 1812, such as "The Guerriere and the Constitution," which used to be so much in vogue, have long since passed away with the clew-garnets and studdingsails, in spite of the efforts of Admiral Luce.

A true son of the sea is a natural born *raconteur*. Of them there was, once, a jolly, jolly mariner whose sails have long since been furled in the Port of Missing Ships, but whose memory will ever be a landmark in the service career of those who sailed with him. A veteran of the Mexican War, he had entered the navy in 1842, and, according to his own account, he was a boy on the *Somers* at the time of the mutiny. His story of the hanging of Midshipman Spencer was doubtless not so accurate as that of the Honorable Thomas Benton, but it certainly was more picturesque. He was also the stroke oar of Commodore Tatnall's barge when that famous old salt pulled through the fire of the Taku forts and told the English Commodore Hope that blood was thicker than water. His adventures in the Civil War were legion, and if he is to be believed, there was no great event of the navy in which he had not borne a prominent part. The men called him "Dick Deadeye." He always kept one eye tightly shut, except when, in emphasizing some unusually remarkable statement, he would flash it for an instant upon his startled listeners. He wore his hair long and brushed down over the fragment of an ear which had been mutilated (he declared) by a saber cut at Fort Fisher.

A story of the men of the navy would not be complete without a reference at least to the work of their patron saint, Miss Helen Gould, who has done much to elevate the moral tone and standard of the service. Her most remarkable work is the handsome club edifice erected in Brooklyn under the auspices of the Young Men's Christian Association. It is more than a home to hundreds of our men, who without it would be practically without object or interest when ashore on liberty. There are other similar clubs.

It is not the province of this story to tell of naval administration or the organization of the navy department. Let it suffice that the Bureau of Navigation, at the head of which is Rear Admiral Henry C. Taylor, is, under the direction of the Secretary of the Navy, charged with the distribution of the fleet and the assignment and development of the navy's *personnel*. Under the control of this bureau is the General Board, sometimes called the Board of Strategy, over which Admiral Dewey presides. Associated with him are the Chief of Bureau of Navigation, the President of the War College, the Chief Intelligence Officer, and a number of other naval officers specially selected for the duty. The General Board, which is like the general staff of foreign governments, is as yet an experiment.

There is a singular class of marine war craft that must not be ignored. The idea of submarine boats is almost as old as the ships of Tarshish. The French may be considered the exponents of submarine warfare, as the Germans are of the torpedo. Recently American genius has added to our fleet eight boats of this type bearing the suggestive names of *Adder*, *Grampus*, *Holland* (from the inventor), *Moccasin*, *Pike*, *Plunger*, *Porpoise* and *Shark*. They are all about sixty feet in length and about twelve feet in diameter, with a maximum displacement of 122.55 tons. They have gasoline engines of 160 horse-power, except the *Holland*, which has one of only forty-five, and their speed under water is rated at eight knots. They carry one torpedo tube and five torpedoes, and the crew is composed of five men. In time of war their moral effect can scarcely be overated, but their actual worth remains to be proved. They are supposed to be capable of remaining under water eight hours—a much longer time, probably, than would ever be required in actual service—and on trial trips they have accomplished some very remarkable results; but the submarine boat is yet in its tentative stage, and it is probable that exhaustive trials will be accorded those we have before more are authorized.

The new navy is a thing of wonderfully careful organization and mechanical equipment. The day of the swashbuckler and tyrant have departed, and the conditions are now unknown which led Doctor Johnson to remark that he could no more account for people fond of being sailors than he could for other strange perversities of imagination.

THE PRESENT STATUS OF THE PROFESSIONS—THE LAW

HOW THE WORK OF THE LAWYER HAS CHANGED WITH MODERN CONDITIONS—HIS ATTITUDE TO BUSINESS AND TO SOCIETY—HIS INCOME—THE OUTLOOK OF THE PROFESSION AS IT IS TODAY

BY

HARRY D. NIMS

IN the early days of the country the lawyers had their "shops" on the lower floor of their houses, their families living on the floor above. This may explain the wide culture of the profession of that time.

James Kent (afterward Chancellor) studied Greek and Latin two hours every day, kept informed on the decisions of the French courts and made extensive researches into the laws of ancient Rome while actively practising law. Modern lawyers are found in great city buildings devoted wholly to business and professional purposes, and the time which their predecessors spent on Greek and Latin they use to reach their homes, which are often twenty miles away in the suburbs.

The student of fifty years ago, "reading law in an office," usually read "Coke" and "Blackstone," and became familiar with "Frankalmoigne," "Burgage," "Borough English," "Villinage," "Estates Tail," and all the ancient tenures of land. In many States the student of today, having mastered a few pages of the "Revised Statutes," faces with equanimity the part of barless examinations dealing with real property.

The modern real estate lawyers are not human beings educated in law, each with two hands, two eyes, one brain and an office boy; but they are corporations, each with half a thousand hands, as many eyes, hundreds of trained brains, and office boys like the sands of the seashore, innumerable. In the office of these lawyer-corporations, which are generally spoken of as title companies, there are usually to be found complete copies of all public records, relating to titles to the land in the section in which the company is located. The magnitude of the task of making these copies is shown by the fact that

one county alone sometimes possesses as many as 8,000 ponderous volumes of handwritten records, besides the court papers of every suit over a title that has been tried in the county. This mass of information is the stock in trade of the title company. In its hands these records have been indexed and cross-indexed, until they are all available at the shortest notice.

There are still real property lawyers; and a visit to one of their offices gives some idea of the business the lawyer formerly obtained. In them will be found documents compiled in work incident to verifying a title for some client. Each abstract gives a connected history of all the various vicissitudes through which the title to some plot of land has passed. These abstracts were often extra-illustrated by maps, copies of court papers and surveys, and represented the final results of days and weeks of labor on the part of the men who drew them up. The making of such an abstract was usually necessary whenever a purchase of land was made.

The attorney who was given a "title to search" took his papers under his arm and went to the office of the register of the county. Here he traced the title back, deed by deed, to its first owner. All the proceedings taken in any suit regarding it were inspected. The lawyer satisfied himself that there was no legal error to be found in the history of the title, drew up an abstract and then advised his client that it was "good." All this work was of no value for any future investigation unless this same attorney was retained.

It is very evident, then, that most of the real estate business, in every locality where a title company exists, goes not to the lawyers as formerly, but to the title company. Then there is the insurance of titles. Before the

days of the title company the buyer of real estate had no safeguard against flaws of title beyond the confidence he reposed in his lawyer. The title company, however, not only searches the title, but offers to insure its validity—in other words, to reimburse the purchaser for any damage he may suffer from flaws in a title which the company has advised him is clear.

One of the results of the title company has been the almost total disappearance, in the cities, of the conveyancer, who was one of the most picturesque figures of the profession. He was not a man of large affairs, literally speaking. His life consisted of metes and bounds, rods and perches, feet and inches, stone monuments and party walls, commas and semicolons. To become absolutely exact was his greatest ambition. The systems and methods that surrounded such a man were awe-inspiring. Every tool and paper in his office had its place and was kept there by his constant vigilance. His life seemed a perpetual challenge to error. The conveyancers went through a hard struggle before they would use the modern simple methods of transferring property and adopt type-written legal instruments. To convince them that a deed that merely "grants" the land sold is as good as one that "gives, grants, releases, remises, quit-claims, sets over, bargains, sells, conveys and enfeoffs" was out of the question.

Another poacher on the hunting preserves of the lawyer is the trust company. In former times a considerable share of the lawyer's income came from fees for the drawing of wills, or from commissions received as guardian of the interests of children and persons incompetent to manage their affairs, or as administrator of an estate. The man who wishes to make a will now can go to a trust company and find a lawyer to serve him who makes legal questions connected with wills his especial study. The trust company demands no fee. Its only stipulation is that it be appointed executor or co-executor of the will or trustee of the trusts created by it. It finds its profit later in collecting and paying out the moneys of the estate.

The trust companies, when properly conducted, command the confidence of the public, and rightfully so. But, from the lawyer's point of view, they more and more absorb the surrogate practice of the profession; and

the litigations arising from the affairs of estates of deceased persons come more and more into their hands. A like change, as far as the lawyer is concerned, has been brought about in the matter of railroad reorganizations, for, by drawing into its employ counsel skilled in such matters, the trust company, as trustee for corporate securities, has been able to do much of the legal work of these reorganizations.

The poverty of briefless barristers is as proverbial as that of the church mouse. It would not be an unnatural mistake to consider a barrister with only one client hardly better off than one with none. But the modern "one-client lawyer" is usually a prosperous individual. Said a man well known in the business world some years ago to a friend: "I want a young lawyer to put down at a desk beside mine. I'll familiarize him with my affairs and then I want him to keep me out of trouble." The counterpart of this lawyer, whose duty it is to act as his own client's ounce of prevention, may be found in the office of many large concerns. He is often connected with trust companies, banks, banking houses, railroad and other transportation companies and large wholesale mercantile houses. When a merchant found himself in a tangle, it was once the custom for him to go to his lawyer for advice. The results were a written "opinion" and a fee. The business man today obtains a lawyer who shall work for him alone. Again the field of the general practitioner is narrowed.

The commercial world has found a new sphere of usefulness for the lawyer in what is sometimes called negotiation. The men who do this sort of work seldom go to court. The special value of their services is to get results without litigation. The occasion for calling on them may arise in this way: A concern gets into trouble; perhaps it cannot cope with an unscrupulous competitor or it is unable to obtain new capital to operate its business. When such difficulties arise such a lawyer is called in, not because he is a lawyer, but rather because he is thoroughly trained in business as well as in law. By reason of his tact and ability he brings the competitors together and they adjust their differences amicably; or, perhaps, they are persuaded to combine their interests into one concern. If additional capital be necessary, such a man, by assuring investors of the solidity of the

enterprise, obtains the necessary funds and prevents disaster. The work of these men has been decidedly constructive. By their efforts it has often happened that reorganizations have done much to make companies in which the public invests sound and successful.

The growth of consolidation has had marked effect upon the law. Here are ten large concerns manufacturing some article of commerce. Each of them has its own counsel on whom it is constantly calling for advice. A merging of these concerns occurs, and the attorney of those in the deal who wielded the greatest influence becomes the counsel of the new corporation. The other nine look for new clients.

The demands upon a law office which has as clients several of these corporations are multitudinous. Bad accounts to be sued on, suits of employees for personal injury, legal steps involved in absorbing smaller companies, work incidental to the preservation of the corporate existence of the company, and all the legal questions arising from a great industrial enterprise, call for a many-sided law office. This means an office having men trained for legal work of widely different character. In these great offices one sometimes finds as many as eight partners and from four to twenty-five other lawyers, besides stenographers and bookkeepers. One of these attorneys is the managing clerk. His work touches practically every matter in the office, and yet he does not interview the clients, write the brief, try the case in court or argue the appeal. He steers the case through labyrinths of calendar rules that encompass the courts in a city and finally brings it up for trial. He has at his tongue's end the status of every case in the office and keeps in his "register" a record of every move made in each. Finally, if he be in a State which has codified its rules of court procedure, he must become a commentary on that code. A well-known law professor has incidentally termed the study of the New York Code a prostitution of man's intellect.

Another functionary of the big office is the "brief man." "Blackstone!" exclaimed a cynical lawyer not long since, "I could hire him, were he alive today, for twelve dollars a week." If this estimate of the great Commentator's ability be correct, and could the bargain be struck, Sir William would enter this gentleman's office as a "brief man."

Great cases are by no means won in court entirely by the oratory of the advocate. It often happens that some quiet man, working in a recess of the library, strikes the telling blow and wins the case.

Owing to the demand for the influence that the name of a well-known law firm carries with it, it is impossible for the men in the firm to write personally all the briefs and opinions that go out of the office. Much of this work is done by subordinates, and by them submitted to some man in the firm, who signs it as his own.

Under such a system the opportunities for the subordinate to become known are limited. Those who are at the head of such an office often lose sight of the old-time idea that each lawyer, be he clerk or partner, is a man like themselves, whose dearest possession is his good name and whose greatest ambition is to build up for himself a reputation for skill and learning in his profession. Many modern newspapers and periodicals have found that it pays to allow their men to sign their work; but city lawyers as a rule are by no means as generous to their clerks as these newspapers are to their employees. Many lawyers who have built up a reputation for learning and good generalship have founded it, in part, on briefs which they have signed and argued as all their own, when in reality the learning and ingenuity both of brief and argument were not theirs, but the result of the labor and study of some subordinate whose ability they knew well. An occasional "big office" is well known for its prompt recognition of the merits of its juniors, and takes care to give them every possible chance to get ahead. The "big office," with its specialized work—one man giving all his attention to surrogate or probate practice, another to trials, another to briefs, another to pleadings—is not, of course, a new invention. But the number of such offices has largely increased recently.

Fifty years ago young men obtained a law education by reading for a few years in a law office. Study in a law school now takes the place of this novitiate, and the average man who enters a city office does so only after being admitted to the bar. Once connected with a large firm, the chances are he stays for a number of years in its employ; while the man of a half-century ago would have been very likely, on being admitted to practice, to have started for himself. The very existence of

these big offices makes a young man feel he must know a little of what goes on in them before he looks at the world from the window of his office. Once in such a place, however, many men lose heart, preferring to accept the certainty of a salary to the chances of success in facing the world alone. Others stay only long enough to learn how these offices do their business and then plunge out independently. In any event, the big office has tended both to lessen the number of men who begin practice on their own account and to cause those who do start for themselves to take that step at a later time in their life than formerly. It has made the average lawyer less independent than he once was. Many a skilled attorney now spends his life as thoroughly tied down to some other man's law office as does a clerk to the counting-room of a merchant. Lawyers who work as clerks are many, but lawyers who make good livings from their own practice are not proportionately as plentiful as they once were; and it is believed that more than ever before men drift from law into other walks of life.

The work that thousands of lawyers do in the face of these conditions is varied. Three police court lawyers, all known to be experts in Mosaic jurisprudence, were not long since discussing this very question. One stated that he had found a knowledge of the late decisions of the courts a sure road to success. The second was equally certain that the study of the statutes never failed to bring legal eminence. Both opinions were flouted by the third, who laid down the maxim "Mine friends, tricks makes the lawyer."

It was not many years ago that most lawyers in city and country alike undertook criminal and civil cases without distinction. While it is a fact that there has long existed in most large cities a criminal bar—by which is here meant men who devote themselves almost exclusively to criminal law work—it is also true that the more prominent metropolitan lawyers do not make any attempt to get criminal cases; many of them absolutely refuse them. Thirty and forty years ago most lawyers had some criminal practice—at least, they took such criminal cases as came to them unsought—and most of them owed part of their reputation to successful criminal work. Today it is a conservative statement to say that the criminal bar, in some cities, cannot claim even its propor-

tionate share of the best talent of the profession. This is not as it should be. Human life and human liberty are of more importance to the community than stocks, bonds or dividends, and the prevention of unjust convictions is of greater moment to the public than that each victim of a trolley accident should be recompensed for his mental anguish. Many causes have combined to bring about these conditions. In criminal as in civil courts the day of oratory is over. No time can now be given to a lawyer to wax eloquent in the defense of Murphy, who hit Hogan in the eye and robbed him in a street brawl. A criminal trial once offered opportunity to oratorical counsel to remind the jury of the heroes of ancient Rome and Greece, to recite tragic poetry and to recall the glories of the heritage of the American people. In the courts of large cities there exists a strong presumption that judges and jurors are sufficiently familiar with both ancient and modern history to warrant counsel in sticking closely to facts. Accordingly, the facts come out in quick order, and Murphy is back in prison before ye barrister of olden time would have completed his opening address.

Nine tenths of the defendants in the New York criminal courts have no money to pay a lawyer's fee. The result is that these nine tenths are tried by counsel who are assigned by the court when the prisoner is called for trial. Hence these lawyers (numbering about two hundred in all the courts of the county), who frequent these courts for the express purpose of getting these assignment cases, try ninety per cent. of the criminal cases of the county. The remainder of the defendants—the paying ten per cent.—is largely made up of gamblers, pool-room owners, keepers of all sorts of dives, or, in short, prisoners arrested for vice—as distinguished from crime. The defense of such clients has little to attract the average lawyer who possesses a good civil practice. The necessity, also, of rushing cases through the courts has done much to change the popular idea of what is necessary to constitute a criminal trial.

The casual observer of the city criminal court at work is at once struck with the fact that the methods employed seem often to be against the prisoner and in favor of the prosecutor, even the furniture of the room being oftentimes so arranged as to aid the prose-

cutor. The old common law evolved a maxim that a prisoner was presumed to be innocent until proved guilty; but that seems to have been somewhat abandoned.

In large cities a lawyer no longer acquires social position merely because he is a lawyer, as was once the case. Society has found other standards, and the great increase of wealth has made its possession a widely recognized badge of social eligibility. No doubt in that world where once the doctor, the parson and the squire held sway they are not now missed. These professions do not now claim to include in their ranks a large majority of the educated and cultivated men; for such men are now found in nearly all walks of life. Nor perhaps can the law claim as many educated men in proportion to its numbers as formerly.

Said a loyal citizen of a western town: "X-burg hasn't any time for culture now. But if she could get at it, how she would make it hum." The lawyer who is ambitious to stand high in his profession has little time for extended social duties or literary research.

He cannot yet afford to forget the admonition of the old-time judge, that he who would be a true lawyer must "live like a hermit and work like a horse." Time was when no extra effort was needed to enable him to rank among the few cultured men of his locality. To achieve the distinction of possessing especial cultivation nowadays means mental work far beyond that involved in the routine of professional life. Every attorney claims to be a professional man; but let men who are lawyers be asked what they do for a livelihood, and half the answers will be: "I'm in the law business." To a considerable degree the old ideas that have surrounded it as one of the learned professions are passing away. Go into one of the lower courts of a city and see the men who represent the bar there. Among the many characteristics that are ascribed to an ideal old-school lawyer, none are more strikingly absent than those which indicate culture and learning. These men are in the "law business." More and more the educated business man makes the successful practitioner of law.

THE RAPID GROWTH OF PUBLIC LIBRARIES

HOW GREAT CENTRAL LIBRARIES ACT AS NEWS CENTRES FOR BRANCH LIBRARIES, TRAVELING LIBRARIES, HOME DELIVERIES, CLASS ROOM LIBRARIES AND OTHER SMALLER DIVISIONS—THE PROBLEMS OF THE LIBRARIAN—THE EDUCATIONAL VALUE OF LIBRARY EXTENSION

BY

HELEN F. HAINES

THE free public library represents today one of the most interesting social forces at work in American life. As yet it is largely a potential force, but it is working toward the development of a national institution as distinctive and influential as our common school system.

Ten years have seen the beginning and the progress of this development, as twenty-six years span the history of organized library effort and fifty years cover practically the lifetime of the free library maintained by public taxation. The last five years, indeed, count for most of all in their remarkable record of endowments and gifts—so largely

the result of Mr. Carnegie's "investments" in library futures—which are giving to libraries the housing and equipment that will best strengthen and extend their work. In 1901 gifts to libraries reached a value of nearly \$20,000,000, \$12,000,000 were given for the first half of 1902, while still more significant in its bearing on the future is the fact that with each year an increasing number of towns and cities accept the maintenance of a public library as a proper municipal charge.

Formerly the people who cared for books were supposed to seek the library, and others need not know of its existence. Today the

public library is working to reach the people. There are many and ever-widening channels through which the library is reaching out into sections of the community hitherto untouched by its influence. Mohammed has gone to the mountain. Through branches and delivery stations it is making the resources of the library accessible in widely separated districts; through traveling libraries it is reaching small groups in varied fields—in factories in social settlements, in fire-engine and police stations, in trolley car barns; through class room libraries it is reaching the great mass of public school teachers and pupils; through home libraries it is reaching children that it could not influence through the schools, while back of all these channels stands the central library, with its special departments for reference, for circulation, for children, that again reach out each in a special field.

So far the public library has not gone beyond bringing its books to group centres. In only a few cases has it carried the book directly to the individual. A system of "home delivery" has been adopted in one or two cities, notably Springfield and Somerville, Massachusetts, but it has been regarded elsewhere as an experiment of doubtful expediency. According to this plan, library messengers are employed who make weekly calls upon persons desiring the home-delivery service, receiving books that are to be returned and delivering books previously ordered. A small fee—at Springfield, one dollar for twelve weeks' service—is paid by the borrower, which is generally only sufficient to defray the cost of the messenger service. At Springfield, besides making delivery of books ordered from the library, the messengers carry with them a collection of some twenty-five volumes from which borrowers may select a book if they desire. The principle of this service is the same as that upon which the commercial agency of the Booklovers' Library—which is practically an Americanized Mudie system of "home delivery"—has been developed. The service rendered is obviously a luxury rather than an essential; the demand supplied is in truth mainly for entertainment or novelty; and the public library, as a State-supported educational agency, must be handicapped—and properly—in any effort to contest this field with a commercial competitor.

In the larger cities public library organization now follows a somewhat uniform system. There is a main building, where the administration is centred, which is the general source of book supply and where study and research work are especially fostered. In this central building may be found a department for blind readers with its unwieldy volumes in raised print, a draughting-room for persons desiring to work on patent specifications or technical designing, a photographic dark-room for the reduction of manuscripts or plans, study rooms in which teachers may have books reserved for the use of their pupils or club members may work up subjects for debate, besides the ordinary departments and the various executive offices.

The interpretation of the public library's functions that these varied departments imply is so recent that not many libraries yet possess all these features, but they find representation in the plans of most of the new buildings. The great central building of the New York Public Library, now being built, provides for these departments and many others; the fine building of the Providence Public Library is also an excellent example of the varied equipment of the modern library.

Next in the scheme of organization come the branch libraries, placed in widely separated sections of the city, each independent in its field, but dependent upon the central library for supplies and under its supervision. It has been estimated that three-quarters of a mile is the average limit of distance that most persons will go to read or borrow books; libraries have not yet been dotted at three-quarters-of-a-mile intervals throughout our cities, but the branch library has become one of the most important elements in the public library system. The Boston Public Library has ten branches; the Philadelphia Free Library has eight; the New York Public Library, thirteen; the Carnegie Library of Pittsburgh, five; in Brooklyn there are eighteen branches, as yet without a central library. In New York, Brooklyn, St. Louis, Cincinnati and Detroit the gifts of Mr. Carnegie will provide within the next few years branch library buildings that should be models of convenience and equipment. Branch library plans, however, are still in the making, and the accepted type has not yet fully developed. But its characteristics are fairly indicated

in recent examples. It houses a permanent collection of not more than 35,000 volumes, most of which are freely accessible to the public on "open shelves"; it provides for reference and reading-room use, for circulation and for children, with one or two study rooms or alcoves; generally there is an assembly room or auditorium seating from 300 to 500 persons. The arrangement is the simplest possible, glass partitions making supervision possible for the least number of attendants. As a rule, all purchasing, cataloging and classifying of books is done at the central building, so that little space for the machinery of administration is required at the branch. Each branch is the centre of its own neighborhood circle, as the main library is the centre of the whole system; it is intended to become a meeting place for lectures, for clubs, and the natural resort of children and teachers for help in school work. This is the theory of the branch library; so far it is mainly in the formative stage. In every city conditions and practice vary, but the next few years will see so great a development on the practical side that more uniformity in methods must naturally follow.

Subsidiary to the branches are the agencies which reach still smaller groups of readers—delivery stations, traveling libraries, class room and home libraries. Delivery stations, as the name implies, are simply places where daily, semiweekly or weekly the library receives books returned and delivers books requested. The St. Louis Public Library has forty-eight such stations, the Chicago Public Library has nearly seventy, the Boston Public Library, twenty-one. In some cases a small "deposit collection" is also maintained, from which books may be selected, and often a delivery station has been the nucleus of a branch. Most of the stations, however, are located in small shops—drug stores being generally chosen—the library usually paying a small amount for the attendance necessary.

The traveling libraries cover a wide field. These are collections from twenty-five to fifty volumes, often specialized on given subjects, which are sent to institutions, societies and other places where they may be kept for a given period and exchanged. The New York Public Library last year had traveling libraries in circulation at district telegraph stations for the use of messenger boys; at the

city hospitals on Blackwell's Island, at seventeen public schools, twenty-one public school playgrounds, six public vacation schools, thirty fire-engine houses, nine Sunday schools, at college settlements, industrial schools, small clubs and missions. In Boston, besides the school collections, thirty-three fire-engine houses and eight city institutions are supplied with traveling libraries. The Philadelphia Free Library has more than a hundred such libraries, the Buffalo Public Library has eighty-four, and St. Louis and Pittsburg are other cities where the distribution of books has been largely extended through this agency; while the Cincinnati Public Library sends its traveling libraries beyond city limits to all parts of the country.

Class room libraries are supplied by the public library for school use, sometimes for home circulation among the children as well as for use in school hours. The collections range in size from twenty-five volumes to one hundred or more, and are chosen with a view to their relation to the school work as well as to the tastes and ages of the children generally. They may be exchanged after a given time; but sometimes they are intended for permanent use. In Pittsburg forty-five schools are supplied with books in this way, and more than sixty thousand volumes are circulated during the year from the school-room collections. In Buffalo books are sent to thirty-three schools, and besides the class room libraries in the grammar schools a daily exchange and delivery service is maintained for the high schools, the total yearly circulation of books through the schools alone reaching more than two hundred and fifty thousand volumes. In St. Louis the schools are supplied on the traveling library plan, boxes of books for supplementary reading being sent out for use in class, each box containing thirty copies of the same book for lower grades and twenty-five copies for upper grades. Indeed, the traveling library principle prevails so largely in all these extension agencies that it is difficult to make clear lines of distinction.

Home libraries represent a different sort of work, more personal in its aspect. It is part of the effort to reach those most remote from the library's influence and to make books a factor in what is practically city missionary work. The home library seldom exceeds twenty-five volumes, made up largely of fairy tales and children's classics. These collec-

tions are kept—on the traveling library plan of exchange after a given period—in homes in the tenements or congested sections of the city, where they are used by the children of the neighborhood and often form the nucleus of little reading clubs. They are generally in charge of "library visitors"—often young women interested in such work who give their service out of interest or sympathy—who meet the children on certain days to read aloud and talk over the books read. The Carnegie Library of Pittsburg has probably the most effective system of home libraries maintained by any public library. It includes thirty home library groups and eleven library clubs, reaching seven hundred children, and is under the direction of a supervisor whose entire time is given to the work. The year's circulation of these books is about five thousand, but these figures indicate less than two-thirds of the actual use of the books, as a book frequently makes the entire circuit of a neighborhood before being returned to the library. One book was read in this way by ten different families. Often when no library visitor is available the boy or girl in whose home the library is placed undertakes its entire charge, and generally with a weighty sense of responsibility. The libraries are frequently named by the children using them, and the names are amusing evidence of patriotism, literary aspirations or the proud leadership of some member of the circle. Among the twenty-seven home libraries maintained last year by the New York Public Library were the Columbus, the Washington, the Nathan Hale, the Roosevelt, the Celia Baxter and the Alcott, not to mention the Abraham Polsky, the Gertie Walthers, and like personal titles.

It is evident that the public library is developing on lines that, to a degree, are paralleling those of the public school system. What is foreshadowed for the larger cities is a public library system based upon a central foundation, with subsidiary centres in each district section of the city, and with a chain of allied agencies reaching out from the library into the homes of the people. And it will need and will get parallel support. In Boston the city appropriates \$300,000 yearly for library purposes, and in New York City the public library system, when in full operation, will entail an expenditure of not less than \$1,000,000 a year.

This development is not limited to the large cities. There are now twenty-two States which maintain special commissions or departments for the improvement or development of public libraries—Colorado, Connecticut, Delaware, Georgia, Idaho, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Vermont, Washington, Wisconsin. In New York this work is carried on extensively by the Public Libraries' Division of the University of the State of New York. In the other States the State library commission is a special board, generally of from five to eight members, with a yearly appropriation ranging from \$500 to \$10,000—although in one or two States no appropriation has yet been granted, and the commission's work has been made possible only through money given by interested persons. In Wisconsin, Iowa, Minnesota, Indiana and Nebraska the commissions have had especially strong influence upon recent library development.

Traveling libraries are sent out to clubs, granges and small villages throughout the State, officers of the commission visit towns where libraries have been or are to be started, and the commission office is a centre for advice and information on library buildings, administration and maintenance. In most of these States the commissions conduct short summer sessions of instruction on library management for the librarians of the State. To a degree, also, they have joined forces, and publish in coöperation a bulletin devoted to library news and practical advice, lists of books recommended for purchase by small libraries, and a handbook of library methods and suggestions. Their influence and activity have grown to a remarkable degree within the past four years, and they represent another step in the formal organization of public library effort. Again, this advance is to be observed in the growth in number and activity of State associations of librarians—now existing in twenty-two States—and in the very recent development of librarians' institutes, conducted by the State associations, and modeled upon the familiar teachers' institutes, with the purpose of improving the standard of service in the libraries of little towns and villages. Add to these various agencies the individual work and influence of the smallest public

libraries, most of which are coming into closer relations with their communities through some of the means previously mentioned, and it will be seen how many and how varied are the points at which the public library now comes into contact with the life of the people.

There are many definite results of this library growth. One of them is the effect of the public library upon current literature. Through the library a good book is raised practically to the rank of a "standard" with certainty and promptness. There is an increasing tendency on the part of librarians to limit their most widely circulated collections to books that count for something in literature, and to supply a great many copies of such books. Thus, at the Boston Public Library it is recommended that five hundred copies at a time be purchased of the Lang fairy books, which are always in great demand by the children. There is a less pleasing side to this in the undoubted promotion through public libraries of superficial books, careless compilations and superfluous popular "series." It is taken as a safe rule by publishers that "libraries will buy them" if they deal with nature, with useful arts, with pemmican biography or history, or with anything practical; and libraries do buy them, in quantities sufficient to justify the publishers' confidence. Another point is the effect of the free access to books now generally granted to the public in small libraries. Even in the large libraries a selection of from two thousand to ten thousand volumes is made freely accessible on open shelves for readers to browse over and select from, and in many branch libraries and small public libraries the entire collection is thus accessible. The popularity of this system and its broadening effect upon the reader have so far outweighed the administrative disadvantage of theft and displacement of books; but one result of its general acceptance must be to set up harmlessness rather than merit as a test in book selection, and so to weaken the library. The librarian whose books are selected for the indiscriminate examination and choice of all sorts and conditions of men and women of all ages has brought home to him the question of a book's moral influence. The question of fiction is a vexing one. The great demand of readers is for fiction—story books for the children, novels for their elders; but it is yet to be determined how large a proportion of the

public funds the public library is justified in expending for these books. Much of the great literature of the world is fiction, but does recognition of Scott and Thackeray and Balzac and the rest warrant the public library in supplying a score of copies of the last much-advertised novel? There is a growing body of opinion in the negative, and it seems inevitable that with the development of the public library as an agency of public education there must be a change of policy regarding the supply of current fiction—a supply that even when pushed to the limit of extravagance can never correspond with the demand of all who want to read the last new novel.

The influence of the public library upon the reading habit, upon the use of books, cannot yet be fairly judged. Fifteen years from now we shall have a basis of observation, for it must be remembered that this development of book distribution through public libraries has not yet lasted for one generation. When the children who within the last six years have been brought in touch with books through the public library shall have gained maturity we can better estimate what the library is doing for the State, just as we are only now beginning to measure the effect of cheap and abundant newspapers upon the popular mind. Cheap newspapers, cheap magazines, the immense production of cheap printed matter, these have probably so far had more effect than the public library in bringing about the enormous increase in superficial reading and the thirst for speedy and comprehensive systems of self-culture. What we call the reading habit is, to a very large degree, a sort of mental indulgence, disassociated from thinking, involving neither effort nor definite result. Yet the use of books, even superficially, leaves a sediment of enlarged interest and quickened sensibilities. It is significant that almost always in reviewing statistics of library use for a period of years there is evident a constant improvement in the quality of the circulation, and a still more definite growth in the use of books for reference use. Here is the best test of the public library's usefulness. It is as it secures the reading of better books, rather than of more books, as it becomes a means to sounder thought and saner judgment, that it will become one of the strongest elements in the social development of the future.

AN ERA OF THRIFT IN THE MIDDLE WEST

MODERN BUSINESS METHODS APPLIED TO FARMING AND CATTLE RAISING—THE FARMER NO LONGER AT THE MERCY OF THE MIDDLE MAN—GRAIN TRANSFORMED INTO CATTLE—MECHANICAL APPLIANCES TO FACILITATE HANDLING THE CROPS—THE NEW FARMER

BY

CHARLES MOREAU HARGER

ONE day, late in the recent autumn, a half-dozen farmers, coming fifteen miles, drove into a prairie village with heavy loads of corn. They went to the principal elevator and asked the price.

"Thirty cents a bushel today."

"We will go to the buyer at the other end of the town," said the spokesman.

"It will do you no good," was the reply, "as all the buyers pay the same price here."

"Very well, we will go home and send our corn to market on foot."

They drove back fifteen miles and unloaded the corn into their own granaries, to be shipped later in the form of fat cattle.

Such an incident would have been impossible ten years ago, when the average farmer was compelled to take what was offered for his crop. But two things have worked a transformation in the grain-growing portion of the West: the farmers have become conservative with prosperity, and the railroads have widened the markets.

Five years of good crops in the West have not only paid debts but have also made the farmer capable of employing business methods. A few years ago a settler visited town only once a fortnight or once a month. He took home with him the county papers, the few magazines that he received from the East, and large bundles of groceries and dry-goods. With rural delivery and rural telephones all that is past.

One morning the telephone in my office rang, and answering, I recognized the voice of a farmer friend living a dozen miles from a railroad.

"I see in the Kansas City morning papers," he began, "that there is trouble in Venezuela. Is there anything later?"

"How did you know what was in the morning papers?"

"Oh, we get them from the carrier every day."

It was not noon, yet he had been in touch with the world's news up to three o'clock that morning, and this two hundred miles west of the Missouri River.

Under these conditions the Western farmer has developed an independence in the movement of crops disconcerting to the market manipulators.

Only a few years ago the farmer hauled his wheat directly from the threshing machine to the railroad, loaded it into cars and hurriedly drew his money for it. The chances were that he did not really get any money, for the wheat was mortgaged and the creditor took the proceeds. With his corn it was the same. Dozens of loads might be seen waiting at any prairie station, taking their turns in heaping the dealers' yellow pile. That is seldom seen in these days. Even the wheat is rushed to market only in the remoter sections and in years of mammoth crops. The millers of the West, out in the wheat belt, are frequently hard put to it to secure enough grain for their mills. Elevators are at times empty, and farmers exhibit a strange reluctance to dispose of their produce.

One of the first things the farmers of the West did, after they had harvested one or two good crops, was to build commodious barns—great red structures, after the fashion of the old Pennsylvania barns, with generous haymows and low eaves. They are the symbol of the new generation and the new methods in Western farming. They take the place of the pole-and-sod sheds that, formerly used as barns, now shelter the

implements from the storms of the prairie winter. But more than all, in their bearing on markets and crop movements they have huge bins for wheat and corn, and their holdings have an unexpected influence on the markets of the nation. It was to such barns as these that the farmers who refused to sell their grain went when they returned home. They could await the events of the market, their own masters, subject to no dealer's will.

A striking and present example of the modern attitude of the farmer has been seen in the financial history of the West during the closing six months of 1902. The wheat crop, while not a record-breaker, was a full average of the past two decades; the corn crop was large. Yet the Western farmer, instead of filling the banks with money from his crops, has drawn on his deposits, increased his loans, bought cattle, and rested in the calm security of abundant assets to make possible the profit on his produce. The West has been drawing on the East for money; Western banks have reached the limit of their loan fund; the expansion of the business operations among the Western farmers has been disconcerting to those who wished a speedy settlement.

The West is sending its grain to market "on foot." It has learned that the secret of profit is in approaching as nearly as possible the manufactured product. Sometimes it is not possible. Such a season was 1901-2. The corn crop of the West was ruined by the drought of summer and cattle-feeding was abandoned. The ranch owners, having no market, were at the mercy of the packers. The farmer and stock-feeder were idle, and awaited the harvest of another crop of maize. This came in the fall of 1902. At once there was a rush to fill the yards. Estimates place the following figures on the number of cattle and sheep handled in the feed-lots of the leading corn-producing States:

	Cattle	Sheep
Kansas.....	700,000	500,000
Nebraska.....	400,000	700,000
Missouri.....	800,000	200,000
Colorado.....	100,000	150,000
Iowa.....	750,000	200,000
Oklahoma.....	100,000	75,000

These figures are approximate: no one can give exact statistics on an industry so varied and so scattered. The amount of money invested in this quantity of stock is enormous. The cattle, for instance, weigh about one

thousand pounds when they go into the yards, and are bought for about four cents a pound, or forty dollars each. The sheep sell to feeders for at least two dollars a head. With these millions of dollars invested in live-stock, the farmers require other millions' worth of grain and "roughness," or fodder, to make good their returns.

Time was when there was but one path for Western grain: eastward to the seaboard. Through the St. Paul, Omaha and Kansas City gateways passed the golden harvest. At the height of the season it was impossible to find cars for the grain, and wheat was piled by the tens of thousands of bushels on the open plain or was sheltered by circus tents.

That day has passed except in remote sections and under unusual conditions. Grain goes to Europe from the prairies of the West through three principal channels: over the rails and through the Atlantic seaboard, to the same destination by way of the Lakes, to the Gulf of Mexico by Southern railways. The latter, though of recent origin, has grown rapidly in importance. New ports are being opened, new lines of railroad built, and the bond of interest between the North and South of the Western States grows closer each season through the interchange of commodities. The diffusion of crops grows more easy and rapid, and the congestion of grain in transit will soon be unknown. A return of the old-time methods would derange in a week the carrying trade of the nation, and grain dealers would be in confusion.

In addition to greater resources and larger plans, the Western farmer has learned some of the little economies of this age. For instance, early settlers hauled their wheat to the side of box cars on the sidings or to one-story warehouses. They were then involved in the slow and wearisome task of shoveling their loads, perhaps to an elevated bin. The grain cars had a capacity of only 20,000 pounds, and a truck and a grain-box were used in filling them, a few bushels at a time being wheeled along a platform to the track.

Today the farmer drives upon a weighing platform; the rear boards of the wagon-box are loosened, while the weight is recorded and a sample is taken out for testing; the whole wagon tips; the red-brown flood descends, and in the time you have taken to read this paragraph the farmer and his team are ready to start for home.

Twenty-five years ago the transcontinental trains were halted in the Smoky Hill Valley of central Kansas that the passengers might admire the vast wheat fields. Thousands of acres, reaching to the far horizon, surprised and charmed the travelers. It was a realization of their dreams of agricultural splendor. But a year later the wheat failed, and the settlers, having no other resource, increased their mortgages or went "back East to the wife's folks."

Today, in that same valley, on the spot where the trains halted, one may stand and see not only wheat fields (now smaller and better tilled), but alfalfa, corn land, orchards, soy-beans, millet, kafir corn, and pasture—not to mention sleek herds of milch cows whose product goes each morning to the yellow creamery in the distance, there to be minted into thirty-cent butter for the distant but quickly reached New York market.

The wheat fails now—sometimes; the corn withers occasionally; the fruit does not always give abundance; but no one sells out or goes back "East" on those accounts. The farmers of the valley sell a dozen articles where they once sold one. That is the secret of the West's prosperity. The same condition exists throughout the prairie States. It tends to stability and contentment. Added, as it is, to the effort to utilize as much raw material as possible on the farm, and to avoid, when able, selling products directly to the dealer without having in some way raised them one step in the scale of value, thus receiving double pay for the labor, it means marked advancement in the management of the Western farmer's possessions. It means simply that the vast territory somewhat vaguely described as "the Middle West" has passed from pioneering and settlerhood into the soberer but happier stage of thrift.

TROLLEY LINES IN A RAILROAD SYSTEM

HOW THE TRUNK LINES ARE ABSORBING ELECTRIC TRAFFIC—A GREAT STREET RAILWAY SYSTEM, ABSORBED AND EXTENDED BY THE BOSTON & MAINE RAILROAD, CONDUCTED ON RAILROAD PRINCIPLES

BY

SYLVESTER BAXTER

THE railroads are absorbing trolley lines. In the recent remarkable development of electric traction first came the stage of local consolidation, in which all city street railways came under single managements. Then came rural expansion. Large sections of the country have been covered by networks of street railways—in places consolidated into great independent systems. Next railroads, here and there, began to utilize electric traction, both trolley and "third-rail," on branches with heavy traffic. In all these early stages there has been a sharp antagonism between the railroads and the new street railways. Profitable suburban traffic has been wrested from the railroads, and in certain instances the railroads have practically been driven from the field. They have lost rural interstation

traffic; and here and there the new rivals carry local freight. Now the railroads appear to be getting their second wind. If they are not winning back old traffic, they are getting new traffic in its place. The enormous summer excursion business developed by the trolley lines in New England helps the steam lines by inducing pleasure trips to distant points, whence the tourists, after several hours in the electrics, return by train. The trolley lines are thus becoming auxiliaries to the trunk lines, operated in unison with them and evidently destined to absorption.

A step recently taken by one of the great systems of the country, the Boston & Maine Railroad Company, is the first decided movement toward such unification. This company, after absorbing more than half the railroad mileage of New England, concluded to acquire

street railway traffic. On account of favorable legislation they began in New Hampshire. A law enacted in 1895 permitted existing railroads to build electric street railway branches and extensions. At the same time street railways were given the right of eminent domain in securing private rights of way, allowing short cuts across lots. Under these provisions the Boston & Maine undertook, about two years ago, the construction and operation of the important new system in and about Portsmouth, and extending thence southward to Rye and Hampton beaches.

The lessons learned from this experience have just been applied in the creation of a new electric division, which boldly parallels the company's trunk line between Concord and Manchester in New Hampshire, using water power from the Merrimac River. It is unlike all other street railways in the bodily adoption of steam railway practice. It bears the same relation to the entire system of the company that any other branch or division does, although at the same time it is a street railway in every essential.

One serious objection to travel by the ordinary electric line has come from the discomfort caused by bumping along over the rough roadbed. This is one of the problems solved by the entrance of a steam railway into the field. The expense of roadbed construction as substantial as that of a steam line has been regarded as prohibitory. But for the whole of the seventeen miles between Concord and Manchester the line was ballasted as thoroughly as the best of steam railways. The highway was excavated to a depth of two and three feet and fresh clean gravel was put down in place of the inferior road material. The expense was kept down by the use of a construction train, regularly equipped with dump cars, workmen's cars and steam shovels. Some of the grades were ten per cent. As these were too heavy for an ordinary locomotive, a geared locomotive, such as is used in mountain work in the Andes, was employed. The use of this train on the streets was made possible by the permission of the local authorities. This reduced the cost of the work two-thirds. Under the right of eminent domain about one-third of the line was built outside of the highway over private land—about two miles near Manchester and three miles near Concord.

The street railway lines of Concord have

been made practically a portion of this new electric system. The law, to be sure, does not yet allow steam railway companies to acquire and operate existing street railway lines—a step that logically follows and which naturally will next be taken in New Hampshire and other States. In this instance, however, the difficulty has been met by securing control of the Concord Street Railway Company through personal purchases in the names of certain officials of the Boston & Maine. The urban railway lines, while remaining legally separate under a distinct corporation, are operated in harmony with the Concord & Manchester electric division, with the same officials at the head of both.

The passenger over this line is struck by the remarkably smooth running of the car. The jar and bumping are no greater than on a thoroughly constructed steam line. The ties, laid in firm ballast, are thoroughly tamped into place, with the rails spiked hard thereto; and improved tie-plates are used at the joints. Much continued future expense in power and from wear and tear has been averted by cuts and fills as heavy as on the average steam railway and by blasting away ledges. In various places the entire highway has thus been changed, greatly to the benefit of ordinary traffic. With heed to the engineering axiom that curves in railroading are a source of waste, the highway was relocated in various places under cooperation with the local authorities. In one place a tangent, or perfectly straight piece of track, 6,000 feet long was thus secured.

To prevent racking of cars and to permit greater speed, the outer rail on curves is elevated, as on steam railways. Near Concord, where the line departs from the highway for a mile or more, the Hookset branch of the trunk line is paralleled, and it is seen how the electric construction bears comparison with the steam railway. To avoid a new bridge, the electric line crosses the Merrimac near Garvin's Falls by the regular railroad bridge. Danger of accidents through a common use of the same track by both electric cars and steam trains is avoided by the use of an interlocking signal system with derailing switches. Another feature in bridges is at a crossing of the steam tracks in Concord. Here the highway bridge, being deficient both in width and strength, has been paralleled by a bridge for the trolley line.



CLIMBING A STEEP GRADE AT FULL SPEED ON A STONE-BALLASTED PRIVATE RIGHT OF WAY

In street-railway management it is a common practice to wait until a given length of track is in really bad condition and then reconstruct it. Here, however, three gangs of section men are at work throughout the year keeping the road-bed and track up to the standard just as on steam lines.

Devices for preventing the slipping of the trolley by all possible strengthening of the supports and by increasing the flexibility of the trolley wire at points of exceptional tension have been provided. A telephone circuit covers the entire line, with telephones at every siding and at all important points. The cars, built from plans of the company's master car-builder, are designed upon steam railway lines—heavier than in usual street-railway practice for the sake of greater stability, smoother running and higher speed. The use of "trailers" in street-railway work—cars without motors drawn by motor cars, as a railway train is drawn by a locomotive—very common in the early stages of electric railway development, is now seldom resorted to, for the difficulty of making quick stops makes the practice dangerous; but on this line the system of running cars in trains when traffic is heavy is made possible by employing the multiple system of control used on the electric elevated lines in Chicago and New York and the elevated and subway lines in

Boston. By this system the motor and air brakes of each car are controlled by a single motorman at the head of the train, just as the engineer on the locomotive controls his train, with the difference that, with independent motive power existing on every car there is an extraordinary promptness in starting, stopping and attaining maximum speed. This is a new departure for street-railway work, vastly increasing efficiency.

In the operation of the system punctuality was difficult to introduce. Employees were not easy to impress with the importance of running the cars on time. But the people along the line are now said to regulate their watches and clocks by the running of the cars. Various steam-railway rules are bodily adopted. An official watch inspector regulates the watches of standard make carried by conductors and motormen. There is a complete system of train despatching by telephone. If a car chances to be delayed more than two minutes at a siding, the conductor is required to call for instructions from the despatcher. Motorman and conductor are held jointly responsible, as in the case of engineer and conductor on steam lines. Therefore the conductor has to repeat his instructions to the motorman before leaving the telephone post so that in case of doubt the despatcher may be consulted immediately by him also.



THE FIRST FOUR-CAR TROLLEY TRAIN

Instead of the "peg-and-hole" method of despatching in use on some street railways, the system adopted here, that of "plotting," is the same as on steam lines. Paper ruled in squares is used. Light lines form squares within those formed by heavy lines. The heavy vertical lines represent the hours and their larger fractions; the heavy horizontal lines the sidings. The progress of a car from Manchester to Concord, both in time and distance, is represented by a line in an upward

slope from the bottom to the right. The car starting from Manchester to Concord is depicted in its progress by a similar plotting, beginning on the same vertical line, and running in a downward slope. The crossing of the two courses denotes the exact place and time where the cars meet. The plotting for the whole day gives, in a lattice-like series of lines, the history of the day's car movement, with the time and place of every crossing. The result of this is the adoption of regular "car-runs" corresponding to the regular trains of a steam line. This in turn has solved the problem of handling extra cars—the cause of some of the most disastrous trolley line accidents both East and West in the past year. Where the motorman is expected to tell the other motorman met at a siding about other cars that are coming, the fallibility of the human memory is likely to lead to serious consequences.

The device of target-signals on the cars by day and colored lanterns by night corresponds to the flags and lights carried by a locomotive and serves the same purposes. A green target or light tells that the section behind is clear, and red indicates that another car is following. The absence of any signals means danger. Extra cars are thus run as sections of a given regular car-run. A car that chances to be delayed loses its regular run and becomes a section of the following run. So there are never any cars "running wild," as in ordinary practice.



SETTING THE SWITCHES AND SEMAPHORES FROM THE SIGNAL TOWER



A TYPICAL CAR LEAVING CONCORD

All this has made possible a system of timetables that gives the exact time when each car leaves every important point. The waiting passenger knows just when to expect his car, just as if waiting at a station for a railway train. This is a vast improvement over the ordinary puzzling street-railway timetable which is appreciated by travelers.

Another exceptional feature is the fully equipped general passenger agency in charge of the company's assistant passenger agent at Concord. For fares on the railway, coupons that correspond to railroad tickets are used. For instance, in case of a trip involving the payment of four five-cent fares, trolley line practice calls for the collection of four nickels at four successive intervals, often to the annoyance and confusion of the passenger. Here the whole amount is collected at once, and coupons to represent each interval are given and kept in sight, as in case of a con-



A NEW BRIDGE, SHOWING HEAVY RAILROAD EQUIPMENT

ductor's check on the steam cars—one coupon being taken up at each fare-limit. Much trouble for passenger, conductor and company is thus very agreeably avoided.

In the general passenger agency special attention is given to the development of business, just as with steam railways. Track is kept of all important public gatherings, the meetings of all sorts of organizations, local and general, church festivals and the like, and for these occasions extra car service is offered. Traffic is built up in every way. On the day of President Roosevelt's visit to Concord—a city of about 20,000 inhabitants



THE TROLLEY LINE CLEARED FOR A STEAM TRAIN



A CLEAR RUN THROUGH THE COUNTRY

—25,000 fares were rung in, but no blockades occurred and not a car was late.

Great pains are taken to select good men and encourage faithful and permanent service. Instead of punishment by suspension, as is customary with the average street railway, the men are dealt with in the ways prevailing on all other parts of the Boston & Maine system. The practice of "record marking" is that in use on steam railroads generally.

A record is kept of every man, and infractions of rules are denoted by graded marks. If a man falls below a certain rating he loses his place. But a man has the right to inspect his own record at any time, and may claim a hearing on any marking. The mark is removed and the record cleared if the circumstances are satisfactorily explained. The annual examination for the men takes the record duly into consideration. This examination covers not only the conduct of employees under the rules, but a determination of physical condition, including a test for color-blindness, and is extremely thorough.

This important experiment is significant of progress in various ways: superior efficiency in public service; advantage to the railway company by an enlargement of its scope through the addition of an important field of operations; advantage to municipalities by improved conditions of the highways; and advantage to employees through subjection to superior methods of discipline, organization and systematized promotion.



THE TRACK IN GOOD CONDITION IN THE SUBURBS OF CONCORD, NEW HAMPSHIRE



PRESIDENT LUCIUS TUTTLE
OF THE BOSTON AND MAINE RAILROAD



GROWING CUBAN TOBACCO IN THE UNITED STATES

SUCCESSFUL EXPERIMENTS IN PRODUCING CUBAN LEAF IN TEXAS AND OHIO—THE METHODS EMPLOYED IN CUBA—A WHOLE FAMILY WORKING DAY AND NIGHT ON A SMALL PLOT OF GROUND—CAN WE COMPETE WITH CUBA IN THE INDUSTRY?

BY

MARRION WILCOX



SEED PLOT IN THE
VUELTA ABAJO

MEANWHILE," said Don Domingo, who had taken us over one of his plantations and through one of his factories that morning, "meanwhile, for our solace, here are some of the best cigars in the world."

As the ordinary cigars are somewhat longer than a finger, so those he laid on the table were somewhat shorter than a forearm; they were black as coals. In

an hour or two the fire would creep that portentous distance with the help of but a little puffing; and in their smoke, for all its pungency, there was the fugitive odor of roses. We had watched him as he chose, one by one, these formidable things among hundreds that his workmen reckoned perfect products of their skill, rejecting the others on account of some slight imperfections that his trained sense detected.

"Infinite care," said he, "is required to cultivate this leaf, and artistic delicacy of treatment and handling at every stage of production. It will not be easy to find labor equal to ours for this particular industry in any other country."

We had been talking as we lunched together less than a year ago—half a dozen men—at a



PULLING THE SEEDLINGS FOR TRANSPLANTING

table placed in the garden of "The Delights," bordering on the Vuelta Abajo.

"Besides," Don Domingo continued, "our peculiar Cuban soil and climate are indispensable for the growth of the finest tobacco. When the Secretary of Agriculture in Washington consulted me about his plans for growing tobacco equal to the Cuban leaf in the States, I said to him: 'We Cubans cannot raise fine tobacco except in certain restricted areas. The products of other parts of the island remain hopelessly inferior.

Even in adjoining fields nature produces different qualities. How, then, should you in America, where soil and climate are totally different from ours, expect to approximate the Vuelta Abajo leaf?' It is a question of climate and soil."

"Soil merely," it was objected; "or, if a warm and moist atmosphere is also necessary, that can be produced artificially, as in the successful experiments with shade-grown Sumatra tobacco in the Connecticut Valley."

"But the soil of Pinar del Rio province is



PLANTING THE SEEDLINGS

"For work in the field antiquated wooden plows are still used"



SEARCHING FOR TOBACCO WORMS

Each leaf must be examined frequently

unique," said Don Domingo. "Until the Department of Agriculture at Washington finds a Vuelta Abajo in the United States it can make no headway."

Now the report of Secretary Wilson, published on December 4, 1902, contains this businesslike statement:

"A conference has been held in Washington recently by the tobacco experts of the Department to consider the general situation and to advise as to the methods to be pursued during next season, especially in Ohio and Texas. Arrangements have been made for experimentation during the coming crop season, with good prospects of producing fine filler tobacco in these two States. *Leaf has been grown that cannot be distinguished from the imported Cuban when properly fermented*"



PREPARING THE TOBACCO FOR SELECTION

"The neglect of growers to sort the leaves adds to the perplexity"



MAKING "CARROTS"
Putting up the tobacco for baling

The Department of Agriculture, in other words, has already found soil in two widely separated States that is suitable for the production of good Cuban tobacco. Has it, then, discovered a new Vuelta Abajo?

This much, at any rate, is clear: recognizing in tobacco grown in Texas exceptional qualities contained only in occasional leaves, to which the main crop was decidedly inferior, the Bureau of Soils sent representatives to eastern Texas, who, after this year's work, report that they have

located the soil-type and have found the desired leaf under conditions which indicate that large quantities can be produced of uniformly high grade. Only a small amount of leaf which could be fermented has been submitted to dealers and brokers in New York and Philadelphia, and these authorities now admit that the leaf is a Cuban leaf with the characteristic aroma.

Most of the land that will produce the leaf is still in forest. The Department will send two



BALING THE "CARROTS" FOR SHIPMENT
Each bale, costing for production between \$50 and \$62, will yield 3,000 cigars



"STRIPPING" TOBACCO
Separating it into individual leaves

parties to Texas at once to survey the area, and will enlarge the party of experts in order to grow fifteen or twenty acres of tobacco. The Department will then have all necessary information in regard to methods of growing, curing, fermenting and packing—details very essential to the commercial success of the industry wherever instituted.

The Department representatives were employed last year at Willis, Texas; at present they are at Woodville and Nacogdoches in the same State, and they have made favorable reports of observations as far south as Liberty. The area thus roughly defined is larger than all the fine tobacco-growing districts in Cuba combined.

And now, if the new industry is developed,

what can be learned from Cuban methods and Cuban mistakes?

In Cuba a clearing on some sunny hillside is used for a seed-plot to secure a natural hotbed for the seedlings; but the growers err by taking seeds from inferior third-growth plants, which, unsuitable for cigars, have been allowed to ripen their seeds. The result is a gradual degeneration, with such diminution of individual plants that their aromatic brown leaves, when they reach the hands of the *escojadores*, have sometimes seemed destined to share the fate of their dwarfed yellow Turkish cousins. To check this degeneration, strong fertilizers have occasionally been used in such large quantities that the leaves, while regaining their lost size, lost



WETTING THE TOBACCO TO MAKE IT READY FOR CIGARS



"IN THE LARGE ROOM WHERE MEN AND BOYS ARE SEATED AT TABLES MAKING CIGARS"

their fine qualities also. Scientific selection of the seeds would certainly improve the crops.

For work in the fields antiquated wooden plows are still used. Indeed, it is related that during the war Cuban refugees essayed tobacco cultivation in Florida, only to discover that they were outclassed by the American farmers. Their failure they ascribed to the malign influence of the modern steel plows and to the American mule. "Give us back our *burros* and Cuban plows! . . . " The fact is that the Cubans of today have not studied their own methods. Unreasoning, they carry on what their fathers have taught them. The cost of production might be considerably reduced by modern devices.

The precious tobacco land is cultivated in small farms—an arrangement that seems necessary to those who employ only primitive

methods of destroying insect life. Don Domingo would tell us that a native family cannot take care of more than a small field. Moreover, the labor of the entire family is required, for work goes on day and night. Every leaf must be examined frequently and kept from the tobacco caterpillar. The wife and children must aid the adult male laborer, taking turns throughout the twenty-four hours. And at the end of a season of such days the family's aggregate earnings, represented in the value the crop has in excess of rent, may be \$500. "Certainly on a large scale there might be great economies; but on a large scale, to exercise the care our laborers take—it is impossible!" Secretary Wilson's comment on the small tobacco farms in Cuba, apropos of the raising of Cuban tobacco in Texas was: "Americans



PUTTING THE BANDS ON CIGARS

will not sit up all night to pick caterpillars off tobacco leaves. They will spray them by machinery."

The neglect of the Cuban growers to sort the leaves adds to the difficulty in the process of manufacture. Again, in the large room where one or two hundred men and boys sat at tables making cigars, until quite recently the windows were always closed. The old idea was that fresh air would carry away part of the flavor and scent of the tobacco; a draught, too, might scatter the light leaves laid in order on the long working-tables. The government of intervention, how-

year 1900, for example, Cuba sent to us only 40,000,000 cigars, while the United States produced 5,800,000,000. Yet we know very well—now, when two years have passed—that quality wins, as usual.

The Department of Agriculture at Washington wishes to learn by experiment whether it can aid our planters and manufacturers to secure quality as well as quantity.

The experiment just begun does not divert to new uses lands that are already productive; on the contrary, it is to be made in a region that has not yet been cleared of forest trees. The probable increase in the value of the



TYPICAL SMALL CUBAN FARMS
One family cultivates each plot

ever, ordered a year ago that such windows should be opened at the top, and conditions now are better. If the experiments in Texas and Ohio are to be successful, the Cuban errors must be avoided; and we should remember, also, while noticing certain imperfections in Cuban methods, that the island's distinctive industry is on the whole well conducted, and so firmly established that competition will at first be difficult.

Preeminence in the production of fine cigars has hitherto seemed to be the monopoly of the Cubans beyond all dispute. In the

lands in eastern Texas may, therefore, be regarded as an unforeseen addition to the national wealth. For it is customary to say that Vuelta Abajo lands are not for sale at any price. In the best districts, such as San Luis, province of Pinar del Rio and San Juan y Martinez, one *caballeria* (equal to thirty-three and one-third acres) of land prepared for planting rents for \$800 a year. In districts which, though uncommonly fertile, produce less approved grades, the rental of one *caballeria* varies between \$400 and \$500 a year.

HERBERT SPENCER, 1884



Photographed by Barnard

HERBERT SPENCER, ABOUT 1865



Photographed by John Watkins

HERBERT SPENCER

BY

GEORGE ILES

DERBY, in the heart of England, is today a stirring town of 100,000 inhabitants, thanks to the Midland Railway, which has its headquarters there. In 1820 the population was scarcely one-fifth as much as now, for all that Derby dates back to the Roman occupation and lies on the highway from London to the north. There dwelt in Derby in 1820 a schoolmaster of ability and notable independence of character, William George Spencer, whose father before him had been a teacher. His own powers of eliciting the thought of his pupils find a remarkable record in his "Inventional Geometry," a little book widely in favor among English and American teachers to this day. Mr. Spencer also devised a system of lucid shorthand which is deemed meritorious by judges familiar with systems of world-wide acceptance.

To this man, who retained comeliness and vigor to his old age, a single child was born,

Herbert, who came into the world on April 27, 1820. His education proceeded slowly and on unconventional lines, first at the hands of his father, and afterward under the direction of his uncle, Rev. Thomas Spencer, Curate of Hinton Charterhouse, near Bath. At seventeen Herbert took up railway engineering, a profession which he followed for eight or nine years, until the crash in railway enterprises forced him out of work. He had, at twenty-two, written for the *Non-conformist* a series of articles on the proper sphere of government. This opened to him a career as a writer, and in London for four years, beginning with 1848, he was a sub-editor of the *Economist*. In 1850 Thornton Hunt, a son of Leigh Hunt, and George Henry Lewes established the *Leader*, a weekly journal, to which Spencer contributed. Another contributor, recalling those far-off days, thus describes him:

"He had a ruddy complexion and gave one the impression of being a young country gentleman of



Photographed by G. A. Fawkes

THE HOUSE IN WHICH HERBERT SPENCER WAS BORN
27 Exeter Street, Derby

the sporting farmer class. When discussion arose his manner was earnest, and he argued as a man who had carefully thought out his convictions. Despite his vigorous look, he had even then misgivings about his health. On Friday nights, just before the publication of the *Leader*, we had at the office eleven o'clock teas. George Eliot, who at that time lived at Chapman's, the bookseller's, near by in the Strand, was sometimes with us. Spencer, like herself, occasionally read final proofs. At these informal parties we usually had Thornton Hunt,

William James Linton, the engraver, and Lewes, who was first presented to George Eliot by Spencer."

In 1850 appeared the first of Spencer's books, "Social Statics," which contained in embryo much of the political philosophy of his subsequent writings. His second work, the "Principles of Psychology," was published in 1855. In 1852 he began the series of essays which many critics regard as his best work. The third of them was an argument for the development hypothesis, of striking power and originality. Still more remarkable was the article on "Progress: Its Law and Cause," which appeared in the *Westminster Review* in 1857, maintaining for the first time as it does that evolution is a universal process. This conviction had struck so deeply into Spencer's mind as to prove the turning point in his career. When, in 1858, he planned his Synthetic Philosophy, it was with evolution as its keynote. In that Philosophy he duly incorporated the Psychology of 1855. In 1896, after thirty-six years' labor, the author came to the end of his task, and a noble monument it is of original and constructive thought, of a purpose courageously carried to success despite poverty, ill health and the prolonged withholding of public recognition.

From an authoritative source some account of the author and his methods is here for the first time published.

When the portraits of Herbert Spencer are compared with those of his father and mother, it is easy to see that the mold and structure



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THE PARADE, BRIGHTON, IMMEDIATELY IN FRONT OF HERBERT SPENCER'S HOUSE



HERBERT SPENCER
HE READS WITHOUT GLASSES AT EIGHTY-ONE

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of his face were from his father, coming out with new strength in the son. From his mother were derived the long upper lip and the distinctive expression of the features. For her he had a strong affection; his grief at her death was profound. During her last long illness Spencer devised for her a bed which moved in any direction at a touch. In other ways he has shown inventive talent. When a young man he constructed a velocimeter to indicate the speed of locomotives. Long before Francis Galton produced composite photographs, Spencer suggested the idea and pointed out its value. In early life he was a capital draughtsman and attained some facility as a painter in water-colors. He had as a young man a strong bass voice of good timbre, and used to sing in part music until ill health forbade the exertion.

When he began the composition of "First Principles" in 1860 he adopted the practice of dictating to an amanuensis. He was spending the summer by the shore of a Scottish loch. His habit was to dictate for a

quarter of an hour, then row for an equal period with the object of so stimulating the circulation of the blood as to carry him through another fifteen minutes' dictation, and so on throughout the forenoon. Neither then nor afterward did he work in the afternoon. Ten years later, at times when his health fell to a low ebb, he would go to a racket court in the north of London, play with the man in charge, and dictate in the intervals of the game. One of the most abstruse portions of his Psychology, the argument for Transfigured Realism, was composed under these unpromising circumstances. His usual programme as he wrote the volumes of the "Synthetic Philosophy" was to leave his house soon after nine in the morning and direct his steps to Kensington Gardens. There he walked until nearly ten o'clock, his head slightly bent, his pace somewhat rapid, his mind evidently in meditation. Yet he was never too absorbed to greet a passing acquaintance with a winning smile. Regularly at ten o'clock he appeared in his workroom



HERBERT SPENCER AT EIGHTY-ONE

At home, sitting overlooking the sea

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in Leinster Place, a retreat known to hardly any one, and sacred against intrusion. He first dictated his correspondence, often rebelling at its onerous demands. Then he turned to his systematic work, soon rising to the full tide of dictation; usually he went on without a break till close on one o'clock, when he hurried away to luncheon. If his health was out of order, he would stop abruptly at any moment and leave the house, saying that his head felt queer. When fairly well he would smoke half a cigar, finding that it promoted the flow of thought. His light-blue eyes, as he reflected, had the thinker's far-away look. The dictation was continuous; there were no interruptions and only brief pauses. The panorama of thought unwound itself slowly and apparently without an effort. He seldom, in resuming his task, needed to be reminded of the last word spoken, and he never changed his calm, sitting position in front of the grate. Never did he patch, reconstruct or begin again. The matter seemed to have long been familiar to him, and only to be taking its final shape before his eyes. Now and then a brilliant thought would flash suddenly upon him. Thus the felicitous antithesis in his "Sociology" of the religion of amity and the religion of enmity was a surprise to himself, and so was his declaration that his works are not only caviar to the many but caviar to the few. He rarely used notes. At the end of a week or two's dictation he would begin revising his pages. His sole objects were greater conciseness and precision of language. There was much substitution of short phrases for long ones, but there were no wholesale excisions and few additions. His works might have been printed from his dictated manuscripts and shown no other defects than redundancies. Considering the difficulty of his subjects, the solidity of the matter and his finish of style and treatment, his rate of composition was not slow. On good mornings he would produce 1,000 words. This was reduced by the time occupied in revision, the arrangement of materials and relapses into ill health to a daily average for the year of 330 words. In 1879, when he was recovering from a serious illness, sitting under the trees of Kensington Gardens, he dictated his autobiography to an amanuensis.

Spencer has never been much of a reader: he was wont to say that if he were to read as much as other people he would know as little

as they. He has never bought many books, nor borrowed from circulating libraries or other sources, and yet he has managed to accumulate enormous stores of knowledge. He read but little in the forenoon, and he dared not read at all in the evening through dread of insomnia, but for all that he seemed to miss nothing in print that bore on his work. Almost all his reading must have taken place at odd moments, just after breakfast, after luncheon, and in the afternoons regularly passed at the Athenaeum Club. A little time went a long way with him: five minutes over an article, half an hour over a book, availed him as much as half an hour or half a day to another man. Much was communicated to him by friends of eminence in science, who took pride in placing their information at his service. Among these were Huxley, Tyndall and Hooker. Huxley read and revised the manuscripts of "First Principles" and "The Principles of Biology." Early in life Spencer mastered the art of putting questions, and his unswerving devotion to a single task kept his mind ever focused, so that every new fact or suggestion at once found its place in his thought. His memory is strong for facts and principles and weak for words; he could never quote correctly poetry of any length. He has the faculty of divination which Augustin Thierry admired in Walter Scott. The blank forms of knowledge were ever in his mind, ready to be filled up by long-considered inquiry. He knew well how to make his assistants render him the utmost aid in gathering data, so as to spare himself for the organizing work he alone could do. He would ask an assistant whether such-and-such a series of facts was to be found in history, with the events of which he had hardly any acquaintance. The man might be an indifferent researcher and not at once discover the facts required; but he always discovered them eventually. Spencer has a keen eye for a hint that an ordinary thinker would not notice. In his "Sociology" he sets forth his ghost theory of the origin of religion—the theory that a ghostly double was suggested to primitive man by his dreams and swoons, by apoplexy, catalepsy and ecstasy, and that thence have proceeded beliefs in spirits, in another life, and in deities. The suggestion of all this came to Spencer in Robert Southey's "History of Brazil." In the first volume of that work, page 237, the author says of the Tupis of Brazil: "Tupa is

their word for Father, for the Supreme Being, for thunder; it passed by an easy process from the first of these meanings to the last, and the barbarous vanity of some tribes compounded from it a name for themselves. In these words their whole theology is at once comprised and explained. They addressed no prayers to this universal parent; he was neither the object of hope nor of fear. Their diabolism was rooted deeper: dreams, shadows, the nightmare and delirium had generated superstitions which a set of knaves systematized and strengthened." A theory of animism, which has much in common with the ghost theory of Spencer, is elaborated in Edward B. Tylor's "Primitive Culture." Both authors worked independently and in ignorance of each other's results until the publication of Spencer's "Sociology." A singular adumbration of the theory of Spencer was set forth by Thomas Hobbes as long ago as 1651, in the forty-fifth chapter of his "Leviathan," in which he treats of Demonology.

Spencer's knowledge of literature is not extensive. He is familiar with Shakespeare and Scott. He has a hearty admiration for "Tristram Shandy," and dislikes the coarseness of Fielding; he regards the "Autocrat of the Breakfast Table" as a gem. He liked William Black's short stories as they were read to him during a convalescence, and relished the sharp skits of Grenville Murray's memoirs. All that he has taught in his "Ethics" he has exemplified in his life. His business engagements, under whatever stress of ill health or early penury, were always strictly fulfilled. For more than forty years he has been, in a manner, his own printer, engraver, book-binder and publisher. Everybody who has dealt with him in these various interests testifies that he is a just and generous man. As in business relations, so also in those of society. While on the committee of the Athenæum Club he constantly fought for the admission of men of science and of letters who had made their mark as against official personages of more notoriety. At the London Library he showed equal courage in withstanding, and successfully, the dictation of a peer eminent for little else than his rank.

Naturally of a robust build, he preserved his bodily vigor till past sixty: it was in 1884 that he became unable to take his accustomed long walks. In that year he began to drive

to the Athenæum Club in the afternoons, instead of walking across the parks as formerly. His cerebral strength had given way many years before. In 1855 he resided at Pentonville, absorbed in writing his "Psychology." He had then few acquaintances, had joined no club, and was left much to himself. He could not shake off the obsession of his subject; his thoughts haunted him by night as well as by day. Ever since he has been a sufferer from insomnia, and for eighteen months after the completion of his book he could do nothing. Then, in his impatience, he one day resumed work, to discover, as George Sand and others in like case had done, that his strength gradually came back to him. He slowly regained vigor enough to accomplish a large amount of toil, but never with perfect security: it was always touch and go with him. At such times he threw up his work and hurried away to his native Derby, or to Brighton or Tunbridge Wells. There he went about killing time as best he could, feeling thoroughly bored and miserable. In three or four weeks he would return, apparently restored, and without an effort take up his work at the point where he had dropped it; in a moment the bow of Ulysses was bent as easily as ever. As time went on these relapses grew less frequent, and at the end of fifteen years' work on the "Synthetic Philosophy" he found himself, in 1875, in much better health than when he began. In 1897 he underwent a serious collapse, followed two years later by a marvelous restoration, attributed to the use of meat cooked in a particular way. This rejuvenescence disposes him to believe that nervous troubles may be assuaged with advancing years.

When Spencer visited America in 1882 his address to his friends at Delmonico's was a chapter from his gospel of relaxation and rest. This was drawn from personal experience. In early life he was told by his physician that his health would never improve while he worked so hard and lived alone in lodgings. From the sixties onward he resided in a boarding-house at 37 Queen's Gardens, one of the best neighborhoods of Bayswater. His recreations now became varied and of inestimable benefit. When lawn tennis was revived he took it up eagerly; he was always ready to join a picnic or an excursion, when he was as active and sportful as the youngest.

He often went to the theatres and the opera, usually in company with friends. He set much store by his annual outing in Perthshire or Argyshire, where he fished for salmon with the thoroughness which went into everything that he did. His flies were always of his own design. Indoors, when in London, to get through the long, dull evenings when he had no engagement, he played whist at first and then billiards, at which his game was steady rather than brilliant. He often dined out, less from choice than for distraction from toil. As a capital talker he was much in request. An audacious lady once sought him for a dance; he told her that he did not dance nor did he care to be a wallflower.

Never has philosopher had more warm friends than Spencer. To the Derby friends of his youth he was attached to the last. One of them, Mr. Edwin Lott, a banker, who died some years ago, was his companion during his American tour in 1882. In London his first associates and friends were Doctor John Chapman, the editor and publisher; Marian Evans, whom he persuaded to become a novelist; and her husband, George Henry Lewes. Afterward came the friendships with Huxley and Tyndall. With Huxley the feeling was chiefly a matter of mutual intellectual respect; in the late fifties the two had long walks together, vigorously debating the new phases of the development theory. With Tyndall the connection was more emotional and less intellectual than with Huxley, although Spencer's uncompromising Radicalism often collided with the Irishman's Orange-tinted Conservatism. To all his friends Spencer was loyal to the bone. When Sir Joseph Hooker fell out with the Minister of Works in the Gladstone administration of 1868-74, he organized the scientific resistance which left the great botanist in possession of the field. In America Spencer had many devoted friends. First and chief of these was Doctor Edward L. Youmans, his most enthusiastic and helpful disciple. When he projected the "International Scientific Series," he induced Spencer to write for it the "Study of Sociology," suggesting how the subject might be treated. That volume remains the most readable of Spencer's many books, and one of the most instructive. John Fiske, who later on based his "Cosmic Philosophy" on Spencer's system, gave his master firm and unflinching support.

One of the earliest honors paid the philosopher was also the most picturesque. About 1870 the late Sir Julius Haast, the explorer, bestowed Spencer's name on a grand range of mountains which buttress the western coast of New Zealand. The next distinction was one which when offered to Emerson was by him considered the choicest of his life. In 1872, or thereabouts, a committee of students of St. Andrews, the oldest university in Scotland, proposed to elect Spencer as their Lord Rector. One of the leading professors, Thomas Spencer Baynes, believed that had he consented to stand he would have been elected. But Spencer dreaded the ordeal of delivering the customary address and declined the nomination. The senatus of the university then proffered him the degree of LL.D. He replied that had such a distinction been offered him when he was young and struggling for recognition it might have aided him; now that he had made his mark and gained a hearing he no longer needed it. The university showed that it took the rebuke to heart; some of its own rising members soon afterward received degrees. Many years later the University of Cambridge offered him an LL.D. It was declined. When Sir Joseph Hooker was president of the Royal Society he wished to honor his presidency by having Spencer elected a fellow, but he would not agree. The X Club long nominated the presidents of the British Association for the Advancement of Science, and proposed to appoint him president, but he shrank from the excitement. When, in 1878, he visited the Exhibition in Paris, he was publicly entertained by a company of professors and deputies, responding in an interesting speech. One of his latest tributes came from far-away Australia. His friends there, in 1900, sent him congratulations on his eightieth birthday; he responded in terms which lack nothing of his wonted power of terse, vigorous expression.

About ten years ago Spencer removed to Brighton. His present house is 5 Percival Terrace, facing the sea in a charming situation. He takes carriage drives in good weather, but his failing health permits him to see few visitors and then only for short periods. Yet when friends converse with him they are surprised and astonished as well as pleased at his vigor and alertness of mind. A presentation bust of himself occupies a place of honor in his house. It is a speaking likeness.

WHAT WE CAN LEARN FROM GERMAN BUSINESS METHODS

STRANGE CONTRASTS BETWEEN OLD BUSINESS CUSTOMS AND
NEW—FEATURES OF COMPANY FORMATION AND MANAGEMENT
—CHARACTERISTIC TRAITS IN BUSINESS—GERMAN TRUSTS

BY

LOUIS J. MAGEE

WHEN an American visits the offices of a great banking or industrial corporation in Germany he finds frugality, hard work, great energy and discipline side by side with wastefulness, disorder, lack of interest and bureaucratic red tape. He sees hard-headed, practical men, well-informed, international and shrewd, dealing often in much empty formality, narrowness and childish self-conceit. He sees, along with modern time-saving methods, an accumulation of useless, antiquated detail.

The visitor receives almost invariably a courteous reception. The more important members of the staff usually have separate, comfortably furnished offices, especially in banks. The separate room system is carried out even for clerks and calculators. The German makes a point of devoting himself entirely to the visitor he receives. I know of an official who has an electric knob under his desk which he presses with his foot when he thinks that he has given all the time that might be expected to a tedious visitor. The office boy, in whose room this special bell rings, appears and announces a board meeting, and the visitor takes his leave. A number of daily papers in various languages are kept on file in the waiting-room for the convenience of visitors. This question of languages enters largely in Europe into the daily routine. The Germans are good, practical linguists, and all the more important clerks as well as the managers speak French and English.

The office opens usually at 8:30 or 9 o'clock and closes at about 6:30, with a pause of two hours from 1 to 3 o'clock. Many business men dine with their families at about 2 o'clock and sleep afterward. A new start is taken late in the day, and much hard work is done even up to 7 or 8 o'clock. Some bank

officials work from 10 to 5 and later, with only a short pause for luncheon. In London and Paris the evening mails close early, and late letters are subject to a fine; but the post leaves Berlin and other large cities in Germany between 9:30 and midnight, thus tempting one to save a day by writing late letters. The pause in the middle of the day, during which outdoor sport is, of course, impossible, is opposed, especially by the younger element. Some of the business men ride in the parks early in the morning, but office-workers as a rule have no opportunity for outdoor exercise.

In some firms where there are a number of managing directors and important heads of departments it is customary to meet in conference and discuss the contents of the mail at a fixed hour every morning. Some concerns register all incoming letters, with number, name and place of sender, date and short note of contents, so that the letter may be easily traced if it goes astray or remains unanswered. Elaborate systems have been worked out for the purpose of controlling the promptness with which letters are acted upon and replied to. Several systems of modern letter files are in use, but the German, especially in technical offices, has great preference for the old-fashioned method of clamping or pasting a letter which has been settled into a pasteboard cover or folder, with a copy of the reply. Letters ready to be signed are placed in books made of colored blotting-paper, the leaves having two or three holes punched through the book. One sees through the holes whether there are more letters to sign. Card catalogues are gradually coming into use, but it is difficult to interest clerks in their applications.

In the management of a company there are usually several "directors" or managers (England "Managing Directors"), one per-

haps who has the bookkeeping departments, another who looks after the factory affairs, and a third who is chiefly interested in the details of general finance operations, where more or less intricate negotiation is necessary. No matter how these directors may divide the work among themselves, they are as a body responsible for the management of the company. In some companies, especially where the diversity of interests requires a larger number of responsible directors, one of them is appointed as the so-called "general director." The general director is empowered to sign for the company—alone. Otherwise it is customary for any two directors to sign together. One of these signatures is the indication of the correctness of the letter, contract or check, the first signature being furnished by the director who is best informed on the matter. It is not usual to appoint a president, vice-president, secretary or treasurer, and no such titles or names of persons ever appear on letter-heads. Every one may, at an expense of twelve cents, obtain from the Commercial Registrar's office of the district or city a list of names of those who are for the moment entitled to sign for the company.

In Germany the president of the company, although not so called, is really the chairman of the board of supervisors (*Aufsichtsrath*). He is consulted by the directors on all very important matters, and holds meetings of the board as often as he sees fit or as often as the managers of the company desire to bring up matters before the board. The manager of a company is forbidden by law to have a seat on the board, but he must attend board meetings. The members of the board receive for their work each year, after the annual meeting, a sum which is made up on the basis of a percentage of the profits (*Anteile*) after a four per cent. dividend has been declared. If more than four per cent. is not possible, the members of the board get nothing. A member of the board of a company that has declared an eight to ten per cent. dividend receives, for instance, from \$1,500 to \$6,000 a year as his share.

The board's work must be that of calm judgment and fair criticism. The balance-sheet and business of a concern must be published, so that the smallest stockholders, receiving the printed report some time before the day of the general meeting, are able to

criticize at will. It is not an unusual thing to see the chairman of the board of a very powerful company answering the questions of a shareholder who has perhaps only three hundred dollars invested, and who has come to the annual meeting with the express intention of making trouble. The books are revised annually by an official auditor. In the rating of assets all securities must be noted at their last quotation on the exchange at the end of the business year; or if they are not quoted on the exchange, then the last price at which they are known to have been sold. But no matter how high the quotation may have been, it is not permitted to rate them higher than the purchase price. Of course, if the quotation is lower than that at which they were purchased, *that* must be booked. This wise clause in the law for stock companies may prove in some years very unpleasant for companies which have large portfolios of securities. A company which has earned very well on its products may show a net loss for the year if it happens to have many "securities" which have been in disfavor with the public.

Three kinds of companies are customary: The limited liability company, the partnership company with shares, and the ordinary share company.

The first is the form used for small undertakings; it has the advantage of limited liability and the privacy of personal ownership; no shares are issued.

The second is a form applied in the case where the individuals who have started a business, or certain large owners, retain a preferred interest and personal responsibility.

There are 6,000 share companies registered, and it is estimated that in these at least one-twentieth of the nation's wealth is invested.

The more noticeable features of the share company are:

The share must have a nominal value of at least 1,000 marks (\$240). It is indivisible. The shares must represent fully paid cash capital or other good assets. If a part of the capital consists of other than cash, such as plant, patents, etc., this part is fixed by the contract of formation, and is subject to the severe examination and approval of the Commercial Court before the company is registered. Every effort is made in the law to create valuable assets equal to the face value, and to prevent "watering." Managing

directors have to "exercise the carefulness of an orderly business man." If they neglect their duties as outlined in the law they are liable for damages. The board of supervisors has not the direct responsibility for the business of a company, but has the obligation to "watch over the management of the business in all branches and to inform itself to this end regarding the progress of affairs." Its members are also responsible against fine and imprisonment and loss of their private fortunes for intentionally hurting the interests of the company or neglecting to do that which "the carefulness of an orderly business man" would dictate.

The deplorable failures of the last two years in Cassel, Leipzig and Berlin revealed, it is true, despite the laws, a very rotten state of affairs in several banks and large companies. Deliberate criminal practice and swindling can hardly be provided against by any stock law. The members of the boards of these companies, as well as the directors, were held responsible, and their property seized in some cases. Imprisonment was also imposed. Since these failures many proposals have been made looking toward their greater efficiency.

It is remarkable that a country made up of so many different kingdoms, duchies, principalities and free cities, all with their own traditions, should possess a common law good for the whole empire in commercial matters, marriage and divorce, the relation of the laborer to the employer, and most other affairs which come close to us in our daily life, and *ought* to be regulated as uniformly as possible throughout any great country. The Germans consider it rather ridiculous that the various States of our Union have such widely different laws; and that the inhabitants of a State find it so easy to evade their own laws by forming their companies in neighboring States. It seems strange, from the German point of view, for Americans to demand a strict control of the trusts while they are perfectly contented with inadequate corporation laws under which unscrupulous promoters can hoodwink the public. Our public, they think, rebel only at the thought of being subjected to monopoly prices.

Concentrations of capital or combinations of interests appear in Germany under the names of "Cartells," "Syndicates" and "Price Conventions." Such associations

have existed and worked quietly for many years. There are about three hundred cartells of various forms, two hundred and twenty of them being among manufacturing concerns and the others among selling firms.

The "cartell" (specifically named) provides for a centralized booking of the orders and a partial regulation of production; but it leaves the sale in the hands of the individual members. The "*Syndikat*" (syndicate) goes further, putting the sale in one hand for domestic or even foreign trade and prescribing the production according to the market. The Coal Syndicate of Westphalia, for instance, has been keeping up the prices for several years. Its present rate of production is about twenty-five per cent. below normal output. An official investigation of cartells has just been decided upon, and a writer who is very well acquainted with their working says: "The German cartells can face such an examination coolly and calmly, and I do not know of any that ought to fear publicity. I only fail to see on what legitimate grounds trade associations of a fully private nature can be forced to make their business public." On the other hand, Professor Schmoller, of Berlin University, says that: "Everything should be done to force them to the fullest publicity which they now shun. In the supervision of the cartells (trusts) a representative of the community at large must be given a voice and the right of veto in case of abuses. Sooner or later it will also be necessary to accord the laborer a similar representation." The recent convention of German jurists adjourned all discussion of the trust question on the ground that trusts could not be made the subject of special control until they became a public danger, and that all supervision must be resorted to with great caution, as it will threaten the individual liberty of the business man and throttle his initiative.

Certain fundamental conditions which favor trusts in America are lacking in Germany. Vast accumulations of capital in a few hands do not exist. The banks take much greater risks than their American counterparts, but even they lack the incentive of large promoters' profits. As the institution of watered stock is not permissible, the chief source of large profit for promoters and financiers lies in the purchase of large blocks of new stock and its distribution among the public; but however profitable the difference

may be to the banker, the company itself is never an absolute loser on such transactions, and is often the gainer. All such profits must go to the reserve fund.

To quote an interesting example: the Auer Company (Welsbach Gas Burner), whose shares have been as high as 1,000 per cent. on the Berlin Exchange, purchased recently the Osmium electric lamp of Doctor Auer. The latter took over new shares at 110. At the same time the bank group bought his shares of him at 260—finally the bankers allowed the shareholders to subscribe for these new shares at 308. The inventor made a million marks, the bankers had their profit and the company increased its reserve fund by a few thousands.

Contracts must be stamped, officials of the Government occasionally appearing at offices to look them through. An ordinary contract of purchase for \$100,000 requires a stamp in Prussia of about \$330 (one-third per cent.). An ordinary contract for the service of employees is stamped with thirty-seven cents.

The German business man has also to take the income tax seriously into account, both for his company and for himself. The earnings of a corporation bear an income tax twice—once at the expense of the company, again as a part of the income of the individual stockholder. The total income tax is divided into a State and a municipal tax. In Berlin, for instance, one pays the Prussian State tax and then one hundred per cent. of that to the city. In some towns of Prussia the needs of the community are less than this one hundred per cent., and in other towns, especially in the great industrial centres of the Rhineland and Westphalia, the percentage runs as high as from two hundred to three hundred per cent. The individual counts his salary and other fixed forms of income at its whole amount, whereas his income from sources that vary from year to year must be given in the form of an average for the last three years. This is especially necessary with lawyers, physicians and others receiving fees for professional work. The total income is taxed according to a sliding scale, beginning with six marks State tax on an income of 900 marks per year, and increasing gradually until, with the income of 100,000 marks, the maximum of four per cent. is reached. A Berlin company with \$10,000,000 capital, paying \$1,000,000 in dividends and *tantiemes*, would pay a State tax of \$26,000 and a city tax of \$40,000.

The postal telegraph and telephone arrangements are excellent and are all operated by the Government. There are 32,299 post-offices in the empire and 15,200 telephone centrals. The ordinary telegram costs for ten words twelve and one-half cents over any distance in Germany. Any post-office receives telegrams for any part of the world. One may send urgent messages for three times the ordinary price, these taking precedence over all other work. In Berlin there are about one hundred and twenty-five post-offices, most of which take telegrams and have pneumatic tube communication with the chief telegraphic office. The Imperial Post made a profit of about \$5,000,000 last year.

It was easier to generalize after three months than now, after a residence of thirteen years in Germany. Facts accumulate to embarrass the observer. If I were forced, however, to say what I consider to be the three features which most hinder business in Germany, I should say, first, enviousness; lack of open criticism. Personal considerations too often take the thought away from work. Secondly, experience does not count for enough. Theory is believed in with too little regard for past error. Thirdly, lack of independence in methods of thought and in character; bureaucratic routine; lack of originality and initiative in finding new methods to meet new needs, and in recognizing these new needs, dependence upon orders from above; lack of fertility in finding quick methods.

I should think, on the other hand, that the Germans possess preëminently the following traits:

First, thoroughness—the mastery of facts in the preparation of a basis for action; elaborate study precedes decision in most financial and technical work; high standard of education.

Secondly, unquestioning obedience to the existing laws—willingness to follow rules; a subordination of personal will to the established method. This is the good side of their lack of independence.

Thirdly, honesty throughout business life is the general rule. Comparatively little business depends upon the use of questionable methods.

In technical progress as well as in general business methods the Germans are keen for progress. All branches of business have their

trade journals, which are eagerly watched, and scores of clever observers are traveling about the world learning much from their neighbors. Only thirty hours after the American astronomer, Perrine, had informed the world-central astronomical office of the discovery of a new comet, a French astronomer telegraphed his news of the same celestial visitor. This faint light of only the ninth magnitude found searching eyes on both sides of the Atlantic. How much more must the great worlds of business and industry on either side of the ocean be waiting for new hints of progress.

An American professor, after visiting a large technological institute in Germany, told me that the school and its equipment was ahead of anything at home. When this compliment was repeated afterward to a prominent instructor in the institute, he replied: "Why, that is exactly what I said of your technical schools after my trip to America, and that is the only way I could get the money to make ours what it is today."

That Germany's technical army is marching forward in good form is a generally accepted fact. The American terror is before their eyes, but they have elements of strength which may keep them up against all competitors in certain lines.

See the Kaiser Wilhelm bridge at Solingen, the ship-building yards at Stettin, Hamburg, Danzig, and the vessels they have produced; the rolling-mills and steel works of the Rhine; the great electrical factories of Berlin, Nuremberg; the Mauser Rifle Works and Loewe Tool Works; the Dusseldorf Exhibition; the "Schwebbahn"—that elevated road whose cars hang over the streets of Elberfeld; the electrical cranes of Hamburg harbor; the Kaiser dock in Bremerhaven—on every hand evidences of good engineering, ingenuity, energy and capital combined with courage. Yes, Germany has become an industrial nation. There are thousands of highly intelligent, excessively energetic men who appreciate the present needs and are anxious to push on to greater achievements. They understand export; they know the world's markets; they adapt themselves to the requirements of foreign customers, but they are handicapped by opposing elements at home. The landed aristocracy cannot comprehend, as their emperor *does*, that the country's salvation lies in its industries and its foreign trade. They, in their shortsightedness, oppose every measure which would encourage financial enterprises and give new life to the great industrial body now lying dormant.

THE WORK OF A JAPANESE CRAFTSMAN

A LITTLE WORKSHOP IN KYOTO PRODUCING MARVELOUS CLOISSONNE WARE—YEARS SOMETIMES SPENT ON A VASE—METHODS OF DECORATING THE WARE—THE STORY OF THE MASTER CRAFTSMAN, NAMIKAWA

BY

HERBERT G. PONTING

Illustrated with photographs taken by the author

WHAT one loves best one can do best," says a Japanese proverb, and at Kyoto you see it made a fact. Among the crowded streets, behind the wooden doors and paper windows of the little tile-roofed houses are created wondrous examples of wondrous arts. Year after year the craftsmen toil patiently, wanting little, living simply, content with the beauty growing beneath their hands, their craft life as

well as occupation. And nowhere in Japan is this life, so different from the modern factory industrialism of other countries, better exemplified than at the little workshop of Namikawa, who fashions in Kyoto the finest cloissonné ware in the world.

When my 'rikisha man had dropped me beneath a sign that read "Y. Namikawa, Manufacturer of Fine Cloissonné Ware," a young Japanese conducted me past a pretty glimpse

of garden into a typically Japanese room. Here I met Namikawa San, a man of gentle, passive appearance and quiet, courtly manner, who invited me by gesture to partake of the tea his wife had brewed as I entered, and then went about selecting from a cabinet near by sundry little boxes, about a dozen of which he laid before me on a graceful Chinese table of blackwood.

Opening one, he produced a bundle done up in yellow cloth and cotton wool. Unwrapping it with tender care, he disclosed a piece

marine and deep purple, one and all decorated with designs of delicate beauty; and each little gem was mounted on its own tiny stand of carved blackwood or stained cherry, as dainty in its way as the piece itself. Seeing my appreciation, he produced other and larger, and finally, the very best and most expensive examples of his skill, for nowhere in Japan is it the custom to display the finest works at first; and only if real and genuine interest be shown will the most cherished works be brought to light. These he at last brought



THE BEAUTIFUL HOME OF NAMIKAWA

of cloisonné so exquisite in design and coloring that the best I had hitherto seen seemed crude in comparison. In turn he opened the other boxes and from each was unearthed a masterpiece.

There were tiny vases of a beautiful groundwork of yellow like Crown Derby. Others in their coloring and design almost suggested Royal Worcester but that they were essentially Japanese. There were urns and caskets of which the prevailing tints were delicate cornflower and peacock blues; there were groundworks of red and olive green, ultra-

out, each finished with a lens-like polish, on which one might search in vain for either speck or flaw.

Each, if exhibited in the large establishments of any American city, would command more than its weight in gold. As they stood on the table they ranged in price from \$25 to as much as \$750, a large piece of the latter value being sixteen inches high and decorated with a matchless design of purple and white drooping wistarias. In such a house, and with so handsome a table for a setting, each piece assumed a far greater beauty and



THE MASTER-CRAFTSMAN, Y. NAMIKAWA, OF KYOTO

charm than it could ever do in any collector's cabinet, and it seemed almost a sacrilege to remove even one of the little works of such

exquisite perfection from the love and care of its creator.

While I was examining each vase and casket and urn in turn, Mr. Namikawa slid open one of the inner doors to admit more light, and as I involuntarily glanced up the beauty of the scene which met my gaze through that open door held me dumb with admiration. Outside was a narrow veranda, fronted with glass; and beyond, condensed into a small space, was the very essence of all that is beautiful in a Japanese garden. The veranda overhung a little lake with rustic bridges and miniature islands clad with dwarf pine trees, of that ancient rugged kind which one sees only in Japan, stretching out their gnarled, twisted limbs, just over the surface of the water, toward others reaching out from the opposite shore. As my host walked out upon the porch, the whole surface of that peaceful pond became as if a fierce squall had struck it, for from every corner was a rush of huge carp, black, spotted and gold, literally to their master's very feet. He scattered a handful of mochi to them, upon which there followed such a frantic struggle and noisy gobbling and sucking, as their snouts came to the surface, that I stood amazed. So tame were they that I could reach down and feed them from my hand.

A little tortoise standing under the shelter



FASHIONING CLOISSONNÉ WARE

One of Namikawa's assistants in the cleanly workshop



NAMIKAWA FEEDING HIS CARP

The fish are so tame as to eat from one's hand



WITHIN THE WORKSHOP
"What one loves best one can do best"

of a dwarf tree on an island in front gazed steadily into my face. I looked long at it, and finally asked: "Why doesn't it move?" Namikawa smiled, and his interpreted reply was: "It is bronze."

After exhibiting his entire stock, which consisted of but a few dozen pieces, for wares of this order cannot be made wholesale, Namikawa invited me to inspect the workshop where these beautiful things received their being. Conducting me out into the garden around the miniature lake, the path

led to another building open to the light on two sides and furnished with running white curtains to soften and diffuse, if necessary, the strong light of the sun. This was the workshop. I had not expected to see a large factory, for in Japan they are few, and many of the greatest masterpieces have been created in a little humble home, where a lone individual toiled ceaselessly and lovingly week after week, month after month, and, in some cases, for years on a single piece; in turn making the copper vase, conceiving and tracing the design, wiring, enameling, firing, enameling again, and still again and again, and finally polishing for many long weeks, until the beloved thing stood complete, a master's work of art. I was not surprised, therefore, to find Namikawa's entire staff in one room. Formerly I had seen a great factory, in Yokohama, where the artisans worked on dirty wooden floors designing and enameling beautiful things. Figures, naked save for a loincloth, scrubbed and ground and polished huge urns, in some cases as big as themselves, the floor puddled with water and gritty with sand and pumice stone. In other places, by the side of large kilns, gleaming a dull red in the half light, stood and watched old and experienced men, the sweat dropping from their nearly nude bodies.

But here were no such scenes. Instead I saw a spotless room twenty-five feet long and half as wide, the floor covered with padded mats, on which, bending over tiny tables,



THE EXQUISITE FINISHED PRODUCT

were eight artists, so intent on their occupation that our intrusion caused but an instant's glance. Close to them were four other figures grinding and polishing; these comprised Namikawa's entire staff.

At one table a new piece was receiving its design—not from a copy, but fresh from the artist's brain, traced upon its surface. At others little particles of gold or silver wire were being bent to exactly the shape of the etched design, and cemented firmly over it, piece by piece, until the design was completely worked over in gold or silver wire upon a silver or copper vase. At other tables the enamel's, mixed as required, were being pushed into these little cells, some no greater in diameter than the prick of a pin, in the exact representation of the colors of nature. They are not at first filled to the top, but only part of the way, and when the entire design is filled all over to the same depth it is ready for the first firing. More enamel is then filled in and it is fired again, and still enameled and fired again and again until the surface is reached, the last filling requiring a greater degree of skill than the preceding ones. After filling and firing for the final time the vase is rough and uneven. It must now be ground with pumice stone and water for many days or weeks to reduce the uneven surface to the same thickness in every part. This is all done by hand, and calls for great skill, for if it were ground thinner in one place than another the work would be ruined. The grinding is accomplished so slowly that the impression of an hour's work is scarcely perceptible. As the surface day by day becomes finer, pumice of softer and smoother face is chosen, until the final pieces used are like silk to the touch. And now it is quite finished, save for the final polishing with oxide of iron or rouge. At last it emerges from the artist's hands with the exquisite and flawless polish of a lens.

Namikawa then makes his final inspection, though every day of its steady growth has been closely watched by him; and if pronounced perfect the piece is wrapped in cotton wool and yellow cloth and consigned to a place in the cabinet in his house.

The firing room, like the workshop, was spotlessly clean and neat. In the centre was the little kiln, and by its side a tank of water in the ground, and at the end a pile of stacked-

up fuel. Here the pieces are fired, Namikawa himself attending to the work, for upon it depends the success or failure of the preceding labor. Some colors are much more difficult to work successfully than others, the various shades of yellow calling for the utmost degree of skill in firing, which even then is often unavailing. He showed me a beautiful thing—the design of a maple tree in the glorious tints of autumn, on a yellow ground—which had taken several months of toil and careful skill to prepare for the final firing and polishing. As the pumice ground the surface down and the details became clearer day by day, unsightly marks began to appear on the surface, showing that it had been unable to stand the final test, and it had emerged from the kiln marred and ruined beyond all hope.

Namikawa is a man of grave appearance, quiet speech and gentle manner. He would appear more in keeping in a Buddhist temple than anywhere else in Japan.

Formerly an attendant at the Court in Kyoto, and always having a deep love of art, he betook himself nearly thirty years ago to the manufacture of cloisonné ware. Throwing his whole heart and soul into the study of the work, he became in time a finished artist. When the productions of his earlier days are shown and compared with the works which now leave his shop, it is seen how great was the gulf which he has bridged.

Each member of his staff, beginning as his pupil, has absorbed his master's ideas from his earliest acquaintance with the art; and although Namikawa now does no work himself except the firing, he closely supervises every piece each day during its entire execution, and instantly detecting if there be any cause for his displeasure, sharply rebukes the transgressor for his want of care. I had an opportunity of seeing this one day. A minute detail on a vase did not please him, his face became hard and stern, and instantly his manner changed to that of an unbending man who knows exactly and instantly what he wants and whose will must be obeyed.

Each artist is permitted to come and go as he will, and work when he pleases, for Namikawa is keenly alive to the fact that a man can do more and far better work if laboring only when the mental inspiration and desire for labor are upon him.

THE PREVENTION OF PHYSICAL BREAKDOWN

AN EXPLANATION OF PREVENTIVE MEDICINE FOR THE LAYMAN—LOP OFF OUTLYING AFFAIRS, LEAVE A MARGIN OF STRENGTH, AVOID A RUT, CULTIVATE A HEALTHFUL HOBBY, TAKE VACATIONS, SLEEP, AVOID EXCESS IN TOBACCO AND DRINK, AND A BREAKDOWN IS NOT NECESSARY EVEN TO THE MOST STRENUOUS MAN

BY

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RESPONSIBILITY and high tension of life cannot be escaped by him who lives intensely and aids in carrying on the business of the world. Much, however, may be done in many cases to reduce these burdens as age advances. Upon the first indication of failing powers, either mental or physical, the burden, as far as it is possible, should be lightened. One of the first means of attaining this end is by cutting off the more distant and least manageable portions of the business. As far as possible the business should be brought within sight and reach. It is the outlying portions which are beyond personal supervision that cause the most worry. Cut them off and make the business more compact and manageable. Do not keep too many irons in the fire. The watching of each additional one demands additional concentration and adds to the mental tension. Work one or two fields well and obtain all they will yield, rather than half a dozen superficially. It will be far easier; you will live longer and accumulate as much in the end. "The one prudence of life is concentration; the one evil is dissipation." Many a man has dissipated his vital and mental powers by attempting to spread them over too much surface. Study your own capabilities; be honest with yourself. If you are convinced that you have large business capabilities, do not over-restrict them; but do not make radical changes nor undertake entirely new kinds of business after middle life. You may not fail, but success will be purchased at too great an expenditure of vital and nervous force to make it advisable.

Many Americans maintain a higher tension

of life than is necessary. The delirious style of doing business is partially habit, but in some cases is done for effect. Men often keep themselves in a nervous state and do more rushing about than there is any necessity for. They keep themselves keyed up to such a pitch that they use up as much vital force in doing routine work and unimportant details as in negotiating great transactions. Like the yellow journals which print enormous headlines for the most trivial matters, and work themselves into an excitement over commonplace events, they give undue importance to details and do everything at high pressure. These high-pressure methods engender laxness in self-control. All this impairs the judgment and renders men capable of making mistakes and incapable of doing good work. It is a tremendous drain upon the vital power. Many a man helps to bring on a breakdown by living a life of unnecessary tension and using up his vital power through failure to control himself.

It is unwise for a man to assume so much business that he will be obliged to labor up to the full extent of his powers. There should be some allowance made for emergencies, when the business will suddenly be increased. Anxiety and worry are more exhausting to the physical powers than actual labor. They cause rapid anemia and loss of flesh. When worry is added to responsibility and exhausting labor, the breaking-down point is brought many times nearer. It is a common experience of the physician to see business men go on without apparent difficulty until a period of panic and financial depression comes, and then break down at the time it is most impor-

tant for them to be on duty with clear heads. It is an insane captain who loads his craft to the water-line because he is lying in a quiet harbor. It requires no nautical skill to foretell the result when a storm comes on. But that is the risk that thousands of business and professional men are unnecessarily taking today. They are allowing no margin for bad weather. The millenium is not here, and the age of panics and business depressions is not past.

A word may be said regarding certain classes of toilers who cannot change the conditions under which they are obliged to labor. They fill the subordinate positions in the great financial and business institutions. They are fixed in a vise, and must perform the duties appertaining to their positions or resign. The duties in many instances cannot be divided or materially lightened, but there are other cases in which the life of the subordinates might be made easier. The long struggle which has preceded the rise to positions of influence and power has the unfortunate effect upon men of some temperaments to harden and render the temper harsh. They are inclined to say that as they were obliged to struggle in their time, let the younger men now take the same experience. This is certainly not universal. But the experience of the medical practitioner leads him to think that there is a growing tendency to work to their uttermost the subordinate officials of financial and mercantile institutions, who carry heavy responsibilities and often handle large sums of money, and when they fail to keep up to the standard drop them and take younger men, to put them in turn through the same ordeal. The heads of these institutions have often come to their positions through great struggles. They should remember, however, that their success has been partly due to native talent; that all men, even by the same labor, could not attain a like success.

Moreover, while opportunities are greater today than they have ever been before, and the rewards of success are larger, the wear and tear in attaining them have greatly increased in the last thirty years. Though there are more places, there are more applicants, and the struggle is more intense. Men will do more work in the same time if they are not held under too high tension. Overseverity defeats its own objects. Prolonged labor without

sufficient rest impairs the value of the laborer. The constant fear that any decrease of effectiveness will be followed by loss of position "gets on the nerves" and renders an employee less efficient. The best work cannot be done with overwrought nerves and under unremitting high tension.

Specialism is not confined to the professions. It is seen in all branches of business and among day laborers. The old-time merchant, whose ships returned laden with all the products of Europe and the East, is supplanted by the importer who buys a single class of goods. Even the department store is an apparent rather than a real exception to the rule. It is an aggregation of different branches of business, each under the supervision of trained specialists. Specialism has come to be a characteristic of modern life. But where specialism goes there goes the tendency to fall into a rut, and a rut is a very bad thing to fall into. "When a fellow begins to find out de rut he's in," remarks that young philosopher, Chimmie Fadden, "it's up to him for him to climb out. If he don't get a move on him then, the first ting he knows de rut is so deep he can't climb out, nohow; and dat queers his nerve." It would be difficult to compress more truth into so little space. The only advice that could be added is a warning against getting into a rut in the first place. It is easier to keep out than to get out.

The young man, when he chooses his life work, whether it be a profession, business or trade, puts his whole mind and strength into it if he be the right kind of young man. The more determined he is to succeed, the more intensely does he apply himself to his work. He associates with others doing the same work. Their ideas become his ideas; their ways his ways. He finds so much to learn that he is inclined to eliminate from his reading and his thoughts all other interests. "The lyf so short, the craft so long to lerne," he restricts himself more and more. He loses interest in other matters. Work becomes a second nature, and he is uncomfortable when he is not at work. As he grows older he restricts his work, perhaps, to a limited portion of the business or profession to which he belongs. He is apt to magnify the importance of his own special work and to minimize that of others. His field of vision becomes narrower; he settles into certain fixed beliefs and adopts certain methods of doing things. His life

degenerates into a routine and before he knows it he is in a rut. He loses his interest in outside matters and is unhappy if he tries to take a vacation. He becomes irritable and is only contented when in the harness. As time goes on he does not do his work with the vigor and energy of old, but dawdles and becomes fussy and wastes time over details. He feels that there is but one way of doing things, and that is his way. Therefore, he will not leave work to subordinates which they could do as well as he. When a man detects these various symptoms in himself, he may be assured that he is in a rut. There is then one thing to be done—to make a vigorous effort of the will and get out of it. If he cannot take a vacation without being restless and unhappy, then a vacation is what he needs. He should force himself to rest. If he has lost his taste for fiction, then he should read a few good stories each year and spend some time upon light literature. If he has given up amusements, he should begin going occasionally to a few good, wholesome places of amusement. He should visit his friends and renew the old acquaintances he has dropped. In a little time these things, at first irksome, will become pleasures, and he will be taken away from his cares and his business worries. Gradually he will find that he is getting out of the rut and is doing his work not only easier but better.

One of the serious features of life in a rut is the fact that judgment is impaired. Allowing the mind always to dwell upon one subject and keeping the attention always fixed in one direction destroys the power to draw correct conclusions and lead to the adoption of distorted and peculiar ideas. The sense of proportion is lost. "They who always labor can have no true judgment," says Burke. Those who get deeply fixed in a rut almost always become more or less "queer" as they grow older. This impairment of the judgment and one-sided way of looking at things lead to the adoption of hobbies and weird and extreme doctrines. This is one of the reasons for the prevalence of *isms* and queer theories. Many of those who adopt them, even though successful in business or professional life, have lived so long in limited or restricted channels that their judgment in matters outside becomes impaired. Their views are narrow and restricted and their lives run along a single channel. If by chance they make an

excursion outside of it, their knowledge of the country is so limited that they are apt to get lost, and either become mired in some bog of superstition or are taken in by some community of fanatics.

The wise man keeps out of ruts. To be certain, however, that he will accomplish this he must begin early in life. He must not begin his life work by restricting himself absolutely to a single channel. This does not mean that he should scatter his forces and attempt everything, or should not become a specialist. But the more strictly he specializes, the more carefully should he see to it that he does not become narrow and bigoted. The young man should early begin the habit of reading a newspaper. It should be a real newspaper, and not a yellow journal which will cause his mental and moral standards to degenerate. He will thus get a general education that he can obtain from no other source. But he cannot get all the education he requires, even of public affairs, from the newspapers. Let him not make this error. Their news is necessarily fragmentary. He should read regularly one or two good monthly magazines of the class devoted to the discussion of questions of public interest. He should read a little good fiction as well as history and general literature. While he should persistently seek the acquaintance of the best men of his own craft, who are usually the broadest minded, he should also seek friends outside of it. They will help him to see that there are other important crafts in the world besides his own. All this will broaden his views and help to keep him out of a rut.

If he finds he is becoming a specialist (the term is used in its broad sense to include any man who restricts his business to narrow limits), he should adopt further measures, even to the taking up of a fad. "Fads constitute a mental antitoxin to the poison generated by cerebral overactivity," says Pyle. This has been a measure adopted by many intense workers. William H. Vanderbilt believed that his life was prolonged by the daily driving of his horses, which he took up as a means of diverting his mind from the cares of business rather than for pure pleasure. His eldest son died a comparatively young man, largely as the result, it was believed, of too close application to business. Chauncey M. Depew has repeatedly said that public speaking is for him a method of recreation.

Literature has been adopted by Roosevelt, Gladstone, Disraeli, and many others. Lord Salisbury is a scientist of large attainments and has done much work in his laboratory, which is one of the best in England. He adopted this means of escape from the crushing cares which rest upon the virtual head of a great empire. The present Prime Minister takes refuge in literature and golf. Some men adopt hunting, fishing, golf and similar sports. Others choose photography, microscopy, or become collectors of this or that, or make themselves experts upon some branch of art. Others with a musical talent become proficient in some branch of that art. The point is simply this: that it is wise for a person to take up some subject for which he has special liking or aptitude, with which he may divert his mind from the anxieties and worries of his daily work. It is not a theoretical proposition, but an eminently practical one, which has been utilized for years and is utilized today more than ever before. Elaborate fads like literature, music and art are not necessary. A prominent and very successful New York lawyer has a fad for baseball. He is a frequent attendant at the League games, where he enters into the spirit of the sport and obtains complete relaxation from professional cares. During other portions of the year he escapes from them in public speaking, which native talent and experience enable him to look upon as a relaxation. Some one, at least, of these or other simple and inexpensive means of diversion are within the reach of every one.

A well-known New York physician used to say that he could do a year's work in eleven months, but could not do it in twelve. The annual vacation is one of the most efficient defensive weapons against breakdown for those who live the intense modern life. If it be a sedentary one, the necessity of the vacation is the greater. It is greater still if it be like that of the busy doctor which knows neither evenings nor nights, Sundays nor holidays, but is an unrelenting grind, month after month. The vacation is one of the most potent aids in helping to keep out of the rut into which the daily routine of life tends to force one. One or two days a week during the summer do not afford sufficient rest for the hard-working business man. They are very beneficial, but do not permit him really to step from beneath his burdens and feel that

he is free from care. I appreciate fully that it is very difficult for many men and absolutely impossible for others to escape from their responsibilities for more than a day or two at a time. It could often be done, however, if its importance were appreciated. Many a man has learned a lesson from an illness. After years of closest application to business he has been forced by disease to remain away from business, and has been surprised and a little annoyed to find that affairs moved on pretty well without him. It is the duty of every man to attempt to arrange his affairs so that he may leave them to others if it is necessary. Accident or illness may come to any man without a warning, and they are rendered far more serious by worry over business. If he prepares for such emergencies in the best way he can, he will find it easier to arrange for a vacation. If he decides upon it in a half-hearted way, to be taken if convenient, he will probably not find it possible. If the time is set for it with the full expectation of going away when the time comes, affairs are much more likely to arrange themselves favorably. The way to take a vacation is to set the time and take it when the time comes. There is some locality north or south favorable for a vacation at every season of the year. If it cannot be taken in the summer, it may, perhaps, be arranged for at some other season.

After fifty the importance of the annual vacation becomes greater each year. A man should rid himself of the idea that a vacation is a simple matter of pleasure or a mild form of dissipation. He should regard it as a duty to himself and to his family, and should plan for it as a necessary hygienic measure. Even though he goes into the country each night, he should, if it is possible, stay entirely from his business for two weeks at least, and longer if he can. As there are many men of many minds, so there are as many ways of spending a vacation as there are individuals. The one rule should be to live a life different from that of the rest of the year, taking the precaution not to overdo the strength. The man of sedentary habits, unaccustomed to vigorous and protracted exercise, may destroy much of the good of his vacation by entering at once upon mountain climbing, extended tramps, prolonged bathing or excessive exercise. Some people seem to be possessed of the demon of unrest

when they get into the country, and act as though they expect to atone for the sins of their months of sluggishness by a few weeks of overexercise. As a rule, exercise during vacation is overdone rather than underdone.

The summer hotel, the cottage or the camp may not be as comfortable as the home. But if people stay at home they will stay also in the rut. The most valuable result of a vacation is to get busy men and women out of their ruts, to take them away from themselves and their everyday cares and remove them from their usual routine of life. If it is rationally spent, it is worth all that it costs in money and trouble.

"If men would but observe the golden Mean in all their Passions, Appetites, and Desires; and if in their Gratifications they followed the uncorrupt Dictates of Nature, and neither spurred her on beyond her Cravings, nor violently restrained her in her innocent Bias, they would enjoy a greater Measure of Health than they do, live with less Pain, and die with less Horror." These words of George Cheyne are full of wisdom, and their observance would correct much erroneous living. One of the most common causes of breakdown is faulty diet. One point alone may be referred to here, namely, the luncheon of many business men. Go into a downtown restaurant in New York near noon, be it cheap, middle-class, or high-grade, and take note of the stuff that composes the lunch of many of the men, presumably sane. It often tends to shake one's respect for human nature. It demonstrates what some men are capable of when away from the protecting care of their wives. Some of these men we know will seek sympathy at home because of the cares of business life when the real trouble with them is downtown-lunch dyspepsia.

Irregular hours and too little sleep are other factors in causing early breakdown. Sleep is an absolute requisite of nature. Different temperaments require different amounts of sleep, but there are very few who can keep healthy and well on less than eight hours. Continuous curtailing of the sleep, even if it be slight, is more serious than the occasional loss of many hours. It renders the mind heavy and sluggish, and few other things will so diminish the power to do good work. In time even a small daily loss will tell upon the health. If to this is added frequent heavy losses of sleep, with eating and drinking late

at night, by a man who carries heavy business or professional burdens, we have all the conditions for disaster soon after middle life. The irregular life of the society man or man-about-town cannot be combined with that of the strenuous business man with impunity.

The subject of tobacco is necessarily included in this chapter. Like all elements which have an effect upon the nerves, it differs widely in its action upon different individuals and no sweeping statements can be made. Upon most constitutions its action is deleterious. It is always injurious before the period of complete development and cannot be used before the age of twenty-five without harm. Doctor Seaver, Director of the Physical Laboratory at Yale, tabulated the record of the students entering that university during nine years, when all the young men were examined and measured. The smokers averaged fifteen months older than the non-smokers. They were also shorter in stature. Nicotine interferes with growth, and its effect in that regard is very measurable. At Yale during the four-years' course the non-users of tobacco, although taller when they enter, gain 24 per cent. more in height and 26.7 per cent. more in girth of chest than do the habitual users. Doctor Hitchcock of Amherst College found even greater differences. The difference in the lung capacity is very striking in the two classes and has been noticed by all observers. It shows the effect of tobacco on the respiration, nicotine being a potent depressor. As regards the effect of nicotine on the mental processes, it is more difficult to interpret the meaning of statistics. Out of the highest scholarship men at Yale only five per cent. use tobacco, while of the men who do not get appointments, sixty per cent. use it. It is not necessary to interpret this as meaning that mental decrepitude follows the use of tobacco by young men; for there are other factors to be considered; but it is certainly not conducive to the best work.

Nicotine is the most active element in tobacco. Its immediate effect is to lower the circulation, quicken the respiration and excite the muscular system; its final effect is to cause general relaxation. In "tobacco heart" the heart's action becomes irregular and irritable and the walls are hypertrophied or thickened. There is no cure without stopping the tobacco. The tendency to increase the amount of tobacco is almost irresistible. It is a safe and

a wise rule for the user occasionally to take honest account of the amount used and reduce it one-half. If tobacco could be banished entirely, there would be fewer irritable and nervous men in the community. We may once more quote our old friend George Cheyne: "Smoking tobacco may be useful to flegmatic Constitutions, but to dry and lean Habits it is pernicious. Snuff is just good for nothing at all."

With the possible exception of bad diet and methods of eating, alcoholic drinking is the most fruitful cause of human breakdown. The physical questions are so interwoven with the moral that it is a very difficult subject upon which to write from the standpoint of physical effects alone. The dangers of excess and habit and the sad results when they become master are universally recognized. Their power to cause suffering and ruin need not here be entered upon. One point only will be considered—the physical effects of so-called moderate drinking. This commonly used term is indefinite, for what is moderation for one may be excess for another. We may say in its stead "the daily or frequent use of con-

siderable amounts of alcoholic drink, but not sufficient to cause symptoms and perhaps never intoxication." In speaking of those men who thus drink and think it does them no harm, Doctor Osler, whose opinion is respected by medical men on two continents, speaks as follows: "During the fifth decade, just as business and political success is assured, Bacchus hands in heavy bills for payment in the form of serious diseases of the arteries or of the liver and kidneys, or there is a general breakdown." This is a statement of a physiological truth in very plain and unmistakable language. While a few constitutions seem to tolerate much more than the average, the fact remains that alcohol is an insidious, treacherous and dangerous element. Its use in considerable daily quantities is always productive of serious and considerable harm.

Again, it may be said that breakdown is by no means a necessary result of our intense modern life. There is more to provoke it than there has ever been before, but at the same time we have more means at our hand to prevent it if we will utilize them.

AN EXAMPLE OF EXACT AND DELICATE WORKMANSHIP

A DESCRIPTION OF AN AMERICAN WATCH FACTORY WHERE
10,000,000 WATCHES, EACH HAVING ONE HUNDRED AND FIFTY
PARTS, HAVE BEEN PASSED THROUGH FOUR THOUSAND OPERATIONS

BY

PHILIP PRESCOTT FROST

BEFORE the year 1800 our grandfathers bought all their timepieces in Europe at high prices. The English clock-maker went into the open market and bought of one man a centre-wheel cast from brass, of another a few suitable screws, of another a crown-wheel adapted to his purpose, and so on through the list of necessary parts. Then he went home and assembled his chaotic collection of plates, screws, wheels and pivots into a clock or a watch, filing away a little here and a little there to make one man's handiwork agree with another's, until the machine was done at last. No two clocks

or watches were likely to be duplicates, and a part once broken had to be replaced by the best substitute at hand.

In 1800, Eli Terry, of Plymouth Hollow, Connecticut, began to make clocks; his townsman, Seth Thomas, followed, and by 1850 the business had spread over Connecticut and into Massachusetts. These men built their first clocks of wood, but wood soon gave way to brass. The Yankee, however, refusing to cast his wheels laboriously, one by one in a mold, punched them rapidly out of sheet brass, inserted cheap iron-wire pivots, assembled the parts before they had time to cool,

and there it was—a clock all complete, built under one roof and costing two or three dollars. Soon America stopped importing clocks and began to export them in enormous quantities to almost every part and corner of the world.

But from 1825 to 1858, as shown by the Treasury Department returns, watches to the value of \$45,820,000 came into this country from England, Switzerland, France and Germany. The methods which succeeded so well in clockmaking were, until 1850, considered too crude for application to the infinitely more delicate task of constructing a high-grade watch. Aaron L. Dennison, a Boston watch repairer who had struggled with the diversity of ailments afflicting foreign constructions, went one day through the armory at Springfield, where machine tools turned out weapons on the interchangeable system, and he returned with a new idea. Watches could be made in the same way, he thought. He interested a few capitalists in his scheme and in 1850 a factory was begun in Roxbury, Massachusetts. That was the beginning.

American makers from the first discarded the "fusee," a contrivance by which the pull of the mainspring was kept constant from the time it was wound until it had run down. By this they reduced the size and weight of the watch and removed parts very likely to break.

The first impression a great watch factory makes is one of absolute cleanliness. Wide lawns with a park across the street are a reminder that dust is fatal to the delicate machinery used in watchmaking. Parks and lawns are a decidedly good business investment. Nor are there heaps of waste visible, the small bulk being so easily handled that it never accumulates. It might easily be mistaken for some school building, save that it is too well lighted. No school ever had so many acres of glass as are contained in these four thousand large windows, for the brick skeleton of the building serves merely to introduce a glass surface.

"Labor troubles?" says the genial superintendent of one great factory. "No, we never had any labor troubles and we don't mean to have any. We pay what we can afford and try to be fair with our people. Of course we have to reduce wages sometimes, but they know we do it because we have to, and they

take it cheerfully. They know we'll raise them again when we can."

The men outside tell the same story. The State law makes fifty-eight hours a week's work. The company accepts one less hour, allowing the employees to decide when they will take the extra time. This year they voted to have all Saturday afternoon through the summer, and no difference was made in the pay.

On entering the works, one may pass with a glance the boiler-room, the engine-room furnishing power to the factory by shaft, pneumatic and electric transmission, and the machine-shop, where one hundred and seventy men are employed building and repairing the machinery used directly in the manufacture of watches. Then we come to the first room of the punch department. Here ribbons of brass run into machines which reduce them rapidly to little wheels and "pillar plates." In four long lines down the high, well-lighted room, set close together, are the punches. The young women who operate them adjust bits of metal quickly on their machines, pull a lever and the punch descends with a ton's weight, rises, and a delicate watch-hand is crushed into being. It requires eight operations to complete the tiny pointer. These are very intelligent machines: before venturing to descend, each carefully brushes the attendant's hand out of harm's way.

In the plate-room the frame is built. Here stand massive machines like modern dragons, each with six "heads" served by arms and hands of steel. The first hand takes a disk of brass and presents it to head number one. Head number one turns it about much as a squirrel would a nut, drives a tiny drill into it here, turns it around and samples it there, tilts it up and worries it a moment in another place, and finally turns it over to be presented by another hand to head number two. This head turns and twists it about, gouging out here and boring there. So it goes down the line until after seven minutes the last hand takes the new pillar-plate and places it in a tube with the others. One hundred and thirty-three operations have been performed, both sides of the plate having been recessed and drilled. The holes and depressions are exact to the thousandth part of an inch. And this wonderful machine replaces more than a hundred skilled workmen.

Every watch must have its number on each of several different pieces, and when from twenty-five to twenty-seven hundred watches are made every day—more than four a minute—this numbering is no light task. Number 11,000,000 has been passed, and that means a watch from this factory for some member of almost every family in the United States.

Down both sides of one room are long benches occupied by machines, with only a few leisurely attendants. A dish containing what looks like corn meal stands nearby. Under the microscope every grain is a screw, threaded and slotted, and a machine is chewing them out at the rate of nine thousand a day. Slightly larger and silver-like are the little pinions. A machine slowly devours iron wire, busily handling meanwhile some little speck of a thing, and out of it comes another pinion with the little gears cut on it, all just alike. After these are hardened they are inspected by a workman at the rate of four thousand a day. Only perfect ones are satisfactory.

Of the thirty-one hundred and fifty employees in this factory, about seventeen hundred are women. The wages for men vary from \$1.50 to \$5.50 a day and the women get from \$1.00 to \$2.25 a day. A foreman thus explains the seeming injustice:

"You see, the young ladies here make the most faithful automatic machinery attendants that we can get. As long as it is only a matter of keeping up the supply of material and reporting on the machines they are all right, but," glancing apprehensively over his shoulder to make sure none of these subordinates are within hearing, "when any difficulty comes up requiring mechanical skill, very few have it. They lack judgment."

In the balance department we find some of the most exact and, from the watchmaker's point of view, most wonderful automatic machinery in the factory. Visitors find it hard to realize, however, what "seventy-two operations" and "eight hundred and fifty balance-wheels a day" mean. But this balance-wheel itself is wonderful—a pendulum in disguise. The bimetallic rim of the wheel regulates the watch for changes of temperature. Every time the balance-wheel of your watch swings it receives a little push from the spring and allows the last wheel of the "train" to move up one tooth. If the watch

is to keep correct time, the balance must release the train at the rate of exactly five beats a second, three hundred a minute, eighteen thousand an hour; and few good, well-regulated watches will lose or gain a full beat in one hour.

The hairsprings are said to be the most expensive manufactured article, weight for weight, in the world. Nine thousand weigh a pound. A fine steel wire is passed between rollers, from which it comes in a microscopic ribbon of uniform width and thickness. This is cut into lengths of twelve or thirteen inches, wound in the form of a spiral and hardened by a secret process. Polishing follows, and the little gray coils are then heated on a griddle until they turn blue.

Within a few years a new difficulty and a serious one has presented itself to watch-makers. The powerful magnetism of electric machinery has great influence upon the steel parts of the watch, and when these become magnetized all good timekeeping is impossible. No man can keep his watch entirely out of danger, but it was only by a long course of experiments that horologists discovered an alloy resembling steel in all except its magnetism. To the outsider this is not so impressive a change, perhaps, as the adoption of stem for key-winding twenty years ago, but it is vastly more important in this age of electricity.

The remainder of the day's work on a watch (each movement turned out by the factory represents about twelve hours of human effort) is hand labor or work with simple machine tools.

The hundreds of bench-workers sit all day with a microscope focused on their work and manipulate the tiny parts brought to them. The average of intelligence and good breeding here could hardly be matched in any factory. Most of the three thousand and more employees have a high school education and there are college graduates among them. The officers of the company, the foremen of the different departments and some of the more skilled workmen are of middle age or past—"grown gray in the service, like me," as the superintendent says ruefully—but the mass of the workers are young people.

Each end of every pinion in a watch must turn in a jewel to reduce the friction and keep the bearing from wearing out, and because of its rapid movement the balance-staff

is given two extra jewels and harder ones. In the escape-room a visitor sees garnets and Montana sapphires worked into form for roller-pins, and in the jewel-making room garnets, rubies, sapphires and diamonds in the rough are turned and worked to the proper form, polished in a manner which gives perfect smoothness to the bearing surfaces, and placed in their brass or gold settings. These are made fast in the watch by screws. Swiss jewels are used to some extent on account of the cheapness of Swiss labor.

The dial makers furnish the last portion of the movement. Enamel powder is sifted on a copper plate and then it is taken away to be "fired." One brief moment in the intense heat of the furnace and a perspiring workman draws out the incandescent disk to cool down through red heat into a smooth white watch dial. The numerals are photographed, printed or hand painted upon it and the dial is fired again.

The office safe holds interesting "plunder"—watches all the way from the dollar watch to quaint old timepieces thick and heavy and wrought with loving skill from the richest of materials. Here is a watch that once ticked cheerfully in the fob-pocket of the Duke of Wellington, so tradition says; and here is another so old that the maker never thought of furnishing more than one hand to mark the hours. Among the others, aristocratic and plebeian, is a burned and disfigured wreck that came through the great Chicago fire.

"But what is that meal sack?" is asked. The great, hulking, well-filled canvas sack seems out of place—until you learn that it is filled with jewels in the rough, precious stones by the handful, the quart and the peck.

The chief of the regulating department is putting the last perfecting touch on a watch destined to tick from the throne of Siam.

In the office, and on every bench in the regulating-rooms, are little sounders. Every other second they tick in unison, except at the fifty-eighth, and then every one knows that the next begins a new minute. Each watch, now in an ice-box, now in a hot-box, and in every one of five different positions, is regulated to keep exactly with the little sounder. When a watch can meet those requirements it is a good, reliable movement.

But what authority has the ticker? Our chief regulator takes us down into the lowest parts of the building, and after manifold

opening of doors we stand in a vault where year in and year out forever neither temperature nor atmospheric pressure are to change where chemicals seize upon all moisture, and there between two massive piers, free from vibration, a pendulum swings on and is driven by delicately adjusted clockwork. An ingenious system of wiring enables this clock to make and break an electric circuit at every swing without destructive arcing at the contacts, and so its ticking is heard in the instruments up where temperature and barometric pressure vary. But that is not the end. Below is a little room in which the clocks bolted to opposite sides of a brick partition quietly keep watch over each other and the less secluded neighbor. So delicately are the pendulums hung that they would run twenty hours without the impulse of the gravitation escapement by which they are driven. The least flake of aluminum in addition to the heavy brass and mercury weight of one would cause it to lose step with its neighbor. These piers do not rest on bedrock lest faint earthquakes reach the mechanism they carry, but on a cushioning bed of sand.

But what authority have these clocks? Up above where the sun shines is an observatory with a telescope, and on favorable nights the astronomer watches for old friends among the stars. These stars know what time it is, and they tell the astronomer, who presses a little key and tells a recording instrument downstairs.

Here, then, after some four thousand operations, we have our little machine of steel, brass, nickel, precious stones, so perfect in every one of its hundred and fifty parts that whatever its temperature or its position it will run steadily on, eighteen thousand beats an hour for hours and days and months and years before its tiny needle-point bearings wear out or break. The little balance-wheel revolves as many times a minute as the drive-wheel of the twenty-hour limited at full speed; but let it fall short only one beat in every full thousand required of it and the daily loss amounts to nearly a minute and a half. Watches have been built which were only one swift little fifth of a second beat in error after twenty-four hours—four hundred and thirty-two thousand swings of the balance—and these watches were turned out by machinery at a cost of only a few dollars.

"THE PIT—A STORY OF CHICAGO"

THE LAST AND BEST NOVEL OF THE LATE FRANK NORRIS

BY

OWEN WISTER

TWO hearts, that should beat as one, estranged by prosperity, and by adversity united in the happy and solemn end: this, stated in its simplest terms, is the theme of "The Pit"—a theme as old as the hills, and all the better for being so. Ingenuity, surprises, novel twists of plot, these also belong to legitimate art; but it is never upon them that the soundest art relies; great artists always concern themselves with the usual, not with the unexpected; with the familiar rather than with the exceptional; and are recognized by their simplicity, not by their complexity. Mr. Norris has chosen a situation that belongs to all time, and has given it a treatment which belongs entirely to himself. This is what we ask of the strong writer, and it is only the strong writer who can do it.

A man of action, shrewd, self-made, and successful in affairs, to whom speculation has so far been no more than a distrusted and occasional pastime, meets and marries the first woman who has seriously interested him. He outstrips his competitors with ease; he conquers her with no very great difficulty. She is not sure how much she loves him, and her own words, "Do you suppose you can say 'no' to that man?" summarize the quality of his wooing, which is but little presented on the scene. That both are large enough natures for a fine and understanding union is shown by one simple and beautiful page after they have come out from church after being married.

But a friend has recently drawn him into certain transactions in wheat so profitable that his latent relish for such excitement is awakened. This starts the crack in their happiness.

"If I leave all for thee, wilt thou exchange
And be all to me? Shall I never miss
Home-talk and blessing?"

Her heart, like every natural woman's, had asked this of her husband, and the answer is—his deepening preoccupation in his wheat

gambling ventures, his increasing absences from her. He was rich already when he married her, rich beyond need of greater wealth; but the lust of the chase is on him, and hence he gives her more and more the luxurious things she does not want and less and less the only thing she craves—the home-talk and blessing. Sometimes her appeals for his companionship (she makes but few, being proud) bring him to her for awhile, filled with desire to make amends; but his brief resolves evaporate like mist in the hot glare of speculation. Repeated triumphs lead him on, flatter his vanity, stimulate his sense of power and his thirst for more power. Each new campaign is on a scale more huge; to see his enemies out-generated, to graze ruin and make half a million instead, all this gives him sensations so poignant and delicious that he grows to require it like some hypodermic injection. Deprived of it, his powers sink flaccid and unelastic. Especially after one victory, when he comes home declaring it shall be his last—that he is done with this debauch of nerves—is the abstinence shown to be a strain greater than his endurance can any longer sustain. He fidgets in idleness; tries books, driving, the theatre, his country place, all quite in vain. These things cannot hide him from his ennui, do not bite sharp enough to stimulate him. He goes back to the wheat pit, and this is the beginning of the end.

Presently the markets of the world are throbbing with his vast operations. The fortune that still attends him makes the annihilation of those who stand in his way; he himself becomes the storm centre, while through his brain sweep the vertiginous currents of trade and strategy which he has set going and could not stop if he would.

To such demands mortal strength is unequal. His judgment grows bloodshot, his human feelings grow bloodshot, his sleep deserts him, and his appetite; and whenever he is not

in action, night or day, the words "wheat, wheat, wheat" sing perpetually in his head; so that he goes flying forward through the weeks with the dread of illness coming behind him and the beckoning illusion of his omnipotence in front. These pages are so powerful that they drag the reader in their sweep even as the wheat drags the hero, even as Dickens and Zola and Tolstoi drag one with an interest and a suspense that are like a joyful riot of pain.

And the man's lonely wife meanwhile? She sits deserted in her uptown magnificence, sharing in her husband's life no longer, knowing nothing of his thoughts, his doings, his hopes or his fears, not even seeing his face any more, but keeping company with empty, expensive furniture. He has ceased to come home at all, but makes his visits to her by telephone, sleeping in a hotel room as close to the Board of Trade as he can get. So for her also a pit opens—a pit of desperation, that she struggles back from. The end is happy.

Stripped of accessories, such is the story; nor do accessories seem to count for much in looking back upon this book. It belongs to a group of financial novels certain of which are familiar to most of us—"Mammon and Company," for instance, and "The Market Place" and Mr. Hope's new story. Very different from each other, all in their way take up the same thread of modern speculation and thus furnish a proper measure by which to gage "The Pit."

I think Frank Norris has outstripped them all. I do not think any one of them compares with him in emotional interest or in grasp of the subject. His study of the quite special technicalities presented seems far more thorough than any of theirs, even Harold Frederic's, whose book has strength. Mr. Frederic's pirate financier is a success; Mr. Benson's is a failure, though he tried hard; Mr. Hope does not try at all, but plays more on the surface; and it is the speculating woman who is the object of his brilliant attention.

When it comes to the accessories, to drawing-room small talk, to a certain light sureness of touch in presenting men and women of the

world, we have nobody, except Edith Wharton, who can do it right. Hope and Benson do it very right. Harold Frederic is clumsy at it, and Frank Norris is behind Harold Frederic. From this inadequacy in accessories may be excepted one comedy scene where a young girl and grown man discuss love, literature and themselves. It is very pleasant.

Concerning the art of "The Pit" certain other reserves are to be made; but if they are all made they will leave still untouched the great main story, strong, passionate, vivid—livid, I had almost written—with interest. The author's firm hand and long reach stretch into tragic depths of the human soul far beyond the compass of the other financial novels I have named.

You have noticed, have you not, how many novels we read, how few we remember? There are little pleasure-bridges by which we cross a mental gap and go on, and that's all. This is one sort of novel, and a good sort, too. Have you noticed how, even though we may think of these stories during the hour that we read them, we never think of their authors for a minute? Their existence does not occur to us.

But there is another, a rarer kind of novel—the kind written by what we call a master. The sure symptom of such a novel is not so much that you remember it, but that you think of its author. You feel the force, the personality, the attitude toward life, that lie behind the printed words; the story is but a medium through which you have met *somebody*; Frank Norris is *somebody*. In his first novel the sea story, this was evident at once. In "McTeague" his strength had grown; in "The Pit" he has risen on stepping-stone to higher things. Such a raw device as (for example) the recurrent descriptive phrase is no longer employed; and his last word to us shows him on the road to have become a master.

There is a marble group called "Death Arresting the Hand of the Young Sculptor." When I think of this group I think of Frank Norris and lament the great loss to our national literature that his death has brought

VIEWS OF READERS ON RECENT BOOKS

THE WORLD'S WORK sent a letter to some of its literary friends asking them what recent books they had read with the greatest pleasure and profit, and requesting that their replies be after the manner of a personal letter. Some of these replies are as follows:

ADELE MARIE SHAW:

A man who can read Barry Pain's "The One Before" without laughter is a troglodyte. Phrases born of its cheerful context come rippling into a depressed atmosphere and smiles—inopportune smiles—widen outward from an inward bliss. There isn't even the pathos of the Goose Girl's "invaldeeds" to edge its unshaded mirth.

"Myra of the Pines" laughs, but the laughter has its moods, like the pines themselves. Of course the artist that can make you laugh can make you cry. It is the tragedian that is oftenest limited. Long ago I found, in a newspaper, stanzas on the death of Stevenson, and pasted them into the copy of "Memories and Portraits" that in the affluent future, of dreams, is to be bound in soft leather. These lines:

"And the tears and the prayers of a planet
That start
From the heart
Reach over the distance and span it
From us to the land where thou art,"

came as naturally from the author of "Myra" as "My little body is weary of the whole push." The Knickerbocker youth of the whimsical combinations and the note of a universal grief are part of the same scale if the audience knows how to listen.

In "innocent mer-ri-ment" is a whole gospel of regeneration, and few there be who can create it. So true a picture as "The Battleground" would be sure to have it, finely distributed like "minor constituents" in the atmosphere. Beside the vulgar commonplace of the Dorothy Vernons the real gentlefolk of this real time show as might a Rembrandt beside a colored "supplement." There are two heroines, sisters, and neither plots against the other; two heroes, cousins, and no villainy to make that pleasing complexity productive of suspense. It is just

life, as it happened, like Uffington-Valentine's "October."

Hornung's last book is life, too. "In the Shadow of the Rope" is not an Arabian Nights; it is not "Raffles," but it "takes hold." We give more interest to the half repellant man-who-would-be-Nemesis than to Harland's lovers who cannot gaze upon the one beloved without a fervent "What sex!" Clear-eyed, honest, tormented Rachel keeps, even in the criminal court, a vital cleanness like highland air. The least character is definite. We get the story without waste or struggle. And though "Mr. Caine and Miss Corelli better please the massy mind," little by little the circle of those who prefer the body of an idea mated to its soul grows wider.

It will widen faster if our boys and girls can be set to reading the right things. In "Golden Numbers" Kate Douglas Wiggin and her sister have given them a beautiful anthology, real poetry, by poets; and there are always nature tales by people who know, like "The Kindred of the Wild" and the books with Dugmore's pictures.

Now and then a book grapples us into a nearness where we can take no thought for form. "The Octopus" does that. For a host of people there is a pang in the death of Frank Norris. The force of the man and of his genius showed so increasingly in his work. He was never meaningless. He roused you either to combat or to acclaim. You might rage at the realism of "McTeague," but if you began the book you read it, and you felt its arraignment. "See these people," it seemed to say, "knowing nothing beyond the animal, the material. There are thousands like them, product of our schools, of our civilization. Why, if we are all we say we are, have they no glimmer of perception an inch above the ground?"

If Frank Norris had lived his genius would have mounted steadily toward the knowledge he has gained in the swift moment of our loss; and there might have been added to his optimism another note—the hint of an immortality superearthly, the persistence of the individual no less than of the type.

It is hard to see how any American can afford to leave "The Octopus" unread. I am waiting with eagerness for "The Pit."

CHARLES H. CAFFIN:

Apart from books special to my work I am more given to the renewal of old friendships than to the seeking of new acquaintances. But among the latest books that mean something to me is Maxim Gorky's "Foma Gordyef." Its rough-hewn realism, for all the ugliness of its sordid picture, suggests such a grip upon facts and represents them in such fit proportion to their local background as to savor of universal truth and to act as a fine tonic upon one's conscience and imagination. Then for a sweeter (?) appeal to the latter quality I can read and reread Maurice Hewlett's "Little Novels of Italy" and his "Richard Yea and Nay." But the former seems more free of the consciousness and suggestion of invention; and as a throwing back of the imagination and a revitalizing of the old matter, with its outward appearance and environment and its spiritual inwardness, such a creation as "The Madonna of the Pear Tree" is completely engaging. I place it in a little niche of my affection alongside Pater's "Imaginary Portraits." And further, there is "Kim"—but my admiration for it I do not choose to try to analyze. I yield to the extraordinary glamor of its crowded and changing spectacle and prefer to lose myself in its phantasmagoric maze.

GAILLARD HUNT:

I have read Benjamin Kidd's great book on "Western Civilization" and I accept it without wholly discarding those authors against whom Mr. Kidd breaks his lance. There is a lofty optimism about the book; it develops an inspiring theory of the advancement of the world, and the style is one of sustained eloquence and strength.

We are Americans before we are critics, and whenever a book comes to us painting truly a picture of American life we know intuitively that it is good, and do not need an expert to appraise its exact value for us. Owen Wister's story, "The Virginian," is one of the best books of the day, because it is a true account of a part of Western life rich in primitive virtues and in the qualities that count for much when put into the sum which makes up the manliness of America.

There are some chapters in Clara Morris's "Life on the Stage"—notably the one in which she describes her first appearance before a New York audience—which are extraordinary in their vivid intensity. Her book confirms the theory that the man or woman who has won and deserved success in a calling requiring the exercise of thought and

imagination has always an instructive story to tell and can always tell it interestingly.

GEORGE H. ELLWANGER:

I know of no writer of recent fiction who exhibits to an equal extent the qualities possessed by Maurice Hewlett—originality of treatment, mastery of expression, stirring, picturesque incident and rich and colorful phrase beginning with "The Forest Lovers" and concluding with the "New Canterbury Tales." I have also found Bernard Capes a dramatic craftsman who invariably exerts a subtle charm. An eerie restless breeze, as of an Autumn wind before the fall of the leaf, plays through his chapters, while the setting of his scenes and certain other characteristics not infrequently recall the author of "The Mayor of Casterbridge." He is perhaps at his best in "Love Like a Gipsy," in the haunted "Mill of Silence," and especially when he flashes the gorgeous ruby in "The Lake of Wine."

Yet the novelist has yet to appear who can be compared as an exponent of romance and realism to Thomas Hardy. What short stories recently published—with due respect to the genius of Bret Harte and the airy fancy of "The Turquoise Cup" and "The Desert" of Mr. Arthur Cosslett Smith—may vie with "Wessex Tales."

Among "nature books" one intuitively turns to Burroughs for the most graceful picture of the bird on the bough; to William Robinson in his newly revised "English Flower Garden" for a consummate presentation of the charm of floriculture; while the recent American volume, "Nature's Garden," may be cited as a delightfully instructive monograph of the wild flower and the mission of its insect visitors.

Mrs. Schuyler Van Rensselaer has discoursed most entertainingly on trees, Mrs. Alice Morse Earle on the love and history of "Old-Time Gardens," and a month or two since Dr. Charles Sprague Sargent, the eminent American botanist, completed his magnificent and exhaustive "Silva of North America." Closely following Thompson Seton, who is his own excellent illustrator, the wild animal and its haunts have been graphically portrayed by Charles G. D. Roberts, seconded by the spirited illustrations of Charles Livingston Bull in "The Kindred of the Wild."

And if one is weary it is pleasant to sink into one's easy-chair and bask in the placid atmosphere and quiet humor of "My New Curate," so artfully diffused by the genius of the Rev. P. A. Sheehan, P. P.

LIONEL STRACHEY:

Are you a Philistine? If you are, shun the "Melomaniacs," keep away from the "Valley of Decision," turn your back upon the "Column." But if you are thirsty for literature which is without deference to gallery-god ideals of life and art, then you may pass agreeable hours in the company of these novels. Compare them with one another one cannot, but a few of their common merits it is easy to state. Mr. Huneker writes of musicians and pseudo-musicians, Mrs. Wharton of eighteenth-century Italians, and Mr. Marriott of Attic souls in British bodies, each with an erudite knowledge of the subject. The three authors are quite free from cant. They are brave and broad. They speak with mature opinion in language sententiously pointed. Their style is in either case personal property. The writers richly possess and as richly diffuse gifts of eminent culture. All of them take a critical view of the dealings of both Providence and man. And, oh Philistine! of no one of the three books can it be said that it is "pure and sweet," that it is "breezy and wholesome," that it "can be read without effort," or that it is "a stirring tale of the American Revolution."

WILLIAM ROSCOE THAYER:

Booker T. Washington's "Up From Slavery" is the most remarkable book yet produced by a Negro, not only because it gives the life-story of the most remarkable of Negroes, but also because it contains the gospel of the regeneration of a race. Mr. Washington's personal vicissitudes, from abject poverty and slavery to his present commanding position, would suffice to insure to his autobiography a permanent place among biographical writings; but the fact that his book demonstrates that Negroes have been and always must be lifted by the same means by which all other races have been lifted from barbarism, makes it immensely significant. For thirty years politicians have tried to persuade us that the Negro Question is political. Mr. Washington proves conclusively that it is educational, economic, moral, social in the largest sense.

"The Life and Letters of John Richard Green" possesses in certain measure a like twofold interest. First, it introduces us to a charming personality. No one who makes Green's acquaintance here can fail to be grateful for it; he is so alert, and sympathetic, and sincere in mind, so buoyant, playful and loving in heart, and he achieves modestly and quietly, against long bodily dis-

tress, work of such rare excellence. And then his letters are a running comment on the methods and aims of historical writers, and show him to be sounder than the other men of his group—Freeman the pugnacious and narrow; Stubbs the dry; Creighton the dull and heavy. They rather looked down on him as an amateur, but his letters reveal patience in scholarship equal to theirs, and a regard for the claims of narrative which has made him—what not one of them ever was—a historian whom all the world reads with pleasure.

Read Mr. Owen Wister's "The Virginian" for the story first; then think it over and read it again as a real contribution, the first in many years made by an American to the art of fiction. See in the Virginian himself a personage worthy to rank with Cooper's Old Leatherstocking, human through and through, the only large representative creation an American novelist has blessed us with since Hawthorne. The book is a literary landmark.

MARY ROGERS MILLER:

I have lately bought three books to give away, but have ended by keeping them myself: "Cross Country with Horse and Hound," "The Misdemeanors of Nancy," and "Emmy Lou—Her Book and Her Heart." Their principal characters are certainly thoroughbreds.

I have never hunted the fox, and must confess that I have always thought it poor business even for the idle rich. I never believed that they really enjoyed cross-country riding. My sympathies were with the fox. I find that I have been buried under a mountain of prejudice which Mr. Peer's charming book has rolled from my shoulders. His view of sport and of athletics in general is the broadest, sanest and cleanest I ever encountered. The book acquaints the reader with a true sportsman and gentleman.

Some folks think Nancy a conscienceless flirt. Nancy and I will not admit this. Neither do I agree with the author that Nancy is a disreputable (though adorable) person. What can you expect of the daughter of a New Hampshire lawyer and a Kentucky belle? I see in her all the instincts of the true sportsman. She plays for the sake of the game itself and not for the killing.

To imitate Nancy or to be dull in her company would be equally impossible.

"Emmy Lou" goes straight to the heart. She is so deliciously—and normally—dull. She is also very dear and very sweet.

Every teacher in the land ought to read

"Emmy Lou" and then take an inventory of herself. There are more good lectures on school-teaching in this book than I ever found in a treatise on pedagogy. Emmy Lou is real. She is American. She is human. You could hardly love her better if she were your own.

DAVID SAVILLE MUZZEY:

Of recent books I have read, I must give the first place to Hon. George S. Boutwell's "Sixty Years in Public Affairs." Stories from their own lips of men who were active in our national councils in the days before Abraham Lincoln's presidency are rare enough nowadays; and when written by such a delightful narrator as Mr. Boutwell they are doubly worth reading. These memoirs are furthermore the record of a statesman.

In Mr. Howells' "The Kentons" is the story of an Ohio family leaving their comfortable home first for a visit to New York, then for a longer period of diversion abroad, simply to cure the eldest daughter of her tender interest in a brazen-faced cad, who really gave the girl the best sort of affection he knew how to give, a mixture of patronizing admiration and prurient attraction. There is not a dramatic incident in the story; the heroine is a moping, plain girl who has little to say, and the scene is for the most part laid on board an ocean steamer during a monotonous voyage. Given such data, we should like to see anybody except the inimitable Mr. Howells produce with them a story to surpass all the elaborate melodrama of the court and the wilderness. Mr. Hamlin Garland, it seems to me, comes nearest to doing it. Mr. Howells writes about real men and women in real circumstances. His incomparable gifts of insight into the springs of action, of mastery of colloquial English, and of a humor refined to the utmost delicacy of suggestion, redeem everything that he writes from the least taint of triviality or commonplaceness.

Finally, I would mention Count Tolstoi's religious and social tracts, entitled "What is Religion?" There is in them an unmistakable suggestion of retrospection and summary. A quality of seership adds solemnity. Tolstoi has worked long and faithfully, and I for one must think very wisely, to solve the most important question of religion, namely: What do I really believe and why do I believe it?

MARY E. WILKINS-FREEMAN:

Maximilian Foster's "In the Forest" is totally different from any other book descriptive of animal life which I have ever read.

It may not be that the mystery of that animal creation which runs parallel with ours, and concerning which we possibly know as little in reality as we do about the life on the planets, is in truth dispelled by these masterly sketches, but we are able to persuade ourselves with a considerable show of reason that a bright light is shed upon some of its dumb secrecy.

At all events, the stories are convincing. They are credible to one's reason. There seems little doubt that that great Caribou who slew his great sire and deposed him from his forest throne, and who in turn yielded up his own sovereignty to his son, lived, and lives. It seems inevitable that they should. It is the everlasting story of the triumph of youth and strength, and splendid selfishness, for the final good of the mass, among animals as well as men. There are many other stories comprised in this collection which delight me. I have not read, for many a day, a book, taken altogether, which so struck me as a new note.

Speaking about books, I have just finished Mr. Stoker's "The Mystery of the Sea." Criticism aside—all books can be criticized—it is a renewal of one's childish delight in a story to read such a genuine one. It is a story which is a story, and moves along with a rattling pace, and holds one's interest from first to last.

Then there is another book, "The Furniture of Our Forefathers," which interests me intensely from its pages of pure suggestion. On looking at these pictures of the ancient seats, chests of drawers, tables, etc., which furnished the homes of our ancestors, I see stories hovering in the air. These things which gave comfort, rest and pleasure to those who have gone before, these pieces of carved wood which went to make the old homes of the nation, are to me like keynotes to the people themselves and their lives.

EVERETT T. TOMLINSON:

Hapgood's "Washington" seems to me a movement toward the newer and true conception of history. "Up from Slavery" is unique. It is national in its scope as well as individual, and if the phrase is not unduly overworked it might be termed "epoch-making."

Brierley's "Studies of the Soul," by its freshness and suggestiveness, has given me a new insight into the possibilities of life. Dean Briggs' "School, College and Character," free from pedagogical cant, has been inspiring by its clearness, saneness and genuine insight into educational values.



AN AMERICAN IN RUSSIA

RUSSIA has been something of an undiscovered country to American progress. It is beyond the lines of our present industrial invasion of Europe. Yet one American whom we know has been doing things there much as thousands of men are doing them at home. Mr. Enoch Emory, of Massachusetts, went into the far Amur province about thirty-five years ago. Since that time, through his enterprise, it has become the best developed of the Siberian colonies. He started to develop one of the most unpromising regions that could have been found. Aside from the natural difficulties of the problem, there was that of a lack of sufficient population. When he first went there it took six months and often more to communicate with the outside world. It can be done now in less than a day. Through his American energy and foresight in teaching the people and in bringing in the latest and best machinery and tools of all kinds, and through the help of the Government, which brought in colonists from European Russia, he has succeeded in making this province on the northern border of Manchuria one of the richest under the Russian flag.

He introduced plows and from them has taught the people the use of our reapers and binders, and has of late successfully brought in our most modern harvesters. He has introduced mining and industrial machinery in large quantities; he has created a fleet that plies the Amur; he has founded warehouses and large stores that supply everything that any one could possibly want; he has started electric light plants and has introduced the telephone. He has established his trading stations all through the provinces, covering a territory of thousands of miles with them. In fact, he has made this region to grow and become important to a degree that is even more astounding to its inhabitants than it is to us. His trade is with all the world north and south. He has at one time or another dismantled and sold throughout Siberia forty-two ships, some of them coming from San

Francisco. The population of this district has been more than doubled through his instrumentality, and by the introduction of labor-saving machinery he has multiplied its output and its resources an innumerable number of times. The Government, having been always favorable to America, has been favorable to him personally, throwing no obstacles in his way, helping when it could—seeing that he was working for what were their most immediate interests.

AMERICAN OPPORTUNITIES IN RUSSIA

RUSSIA and Siberia are the richest two countries in the world as far as mineral and agricultural resources go," said Mr. Emory the other day. "The great field has hitherto been only slightly developed. The Germans have control of the greater part of the commerce, internal and foreign, but they sell as a rule only the cheaper grades of merchandise. The French and Belgians have put in a large amount of capital, but mostly in a speculative way; while the English have started a very few iron and steel factories, and are somewhat heavily interested in the development of the oil trade. The Americans have as yet done very little here. The Germans have exploited most of the American goods which have come to Russia.

"The two lands—the Russian level country and our great Mississippi basin—are the two nearest alike in the world in general climatic conditions and in the character of the soil. If we go to their mountains and look at their iron and coal deposits and see how near together they are and of how easy a mining character, we find conditions that are only to be equaled in our eastern Pennsylvania district. The Russians are primarily an agricultural people. Their methods are the very crudest. The ground is broken with a bent stick shod with a piece of tin which only makes a little scratch on the surface, and the crops are gathered with the old-fashioned sickle and cradle abandoned a generation ago in this country. Labor-saving machinery is rarely to be found. The live-stock and dairy interests are just starting, yet we find that

Russia supplies fifteen per cent. of the world's meat, and that in the last five years she has built up a trade in butter with England alone that amounts to more than \$17,000,000 a year. She has good facilities for transportation and communication. All the enormous trade of Russia is only a new growth, and it is very small compared with that which is certain to come. The industrial condition, it must be remembered, is even more backward than the agricultural one.

"Russia is as certainly a land of promise as our own agricultural and mining regions were thirty years ago. The few attempts which have been made have, indeed, been failures. But it is not because of any fault in the conditions, but rather because of the incompetence of those who undertook the job. As a rule, they were men who had never had any experience in directing large enterprises at home or abroad, or who, so far from wanting to make a success of their ventures, were in them only to sell out.

"But to the American who is accustomed to our conditions, and who has a thorough knowledge of farming or of some manufacture, there can be no reason why he cannot succeed enormously in these large, undeveloped fields.

"It has been said and repeated that this Russian peasant people are ignorant and conservative. To a great extent it is so. They are ignorant, but they are quick to learn. They are conservative because they only know the old methods, and also because their simplicity has been taken advantage of by unscrupulous German traders, until they do not now trust any people who want to sell unknown goods. And here again is another reason why the Americans should get into this great country: the American name on a piece of machinery is a kind of sterling mark, so that anything that is not too complicated will sell merely on its merits as an American machine. We are in great danger of losing this good name, however, because the Germans and other traders are in the habit of selling very inferior goods by representing them to be American. And the only way that this can be stopped is by our trading directly with Russia. Almost all of the things that we sell to Russia pass through Hamburg and Bremen and are handled by German houses, only a little of this business being in English hands. An additional and scarcely less important result of this rehandling on the Continent is that it involves the taking out of several more profits. The goods then become so expensive to the Russians that they can afford to buy them only in small quantities. But if a man goes to these people

and wins their confidence and has the patience to show them, and not try to blackguard them into buying, they will buy and buy liberally."

A LABOR-UNION TURNED CAPITALIST

ABOUT a year and a half ago some fifty polishers and platers in a plant in Rochester, New York, organized a labor-union and made demands for higher wages. They were refused and quit work, when the manager of the works made this rather astonishing proposition:

"You won't work for me!" he said. "Work for yourselves. Start a polishing and plating plant of your own. If you'll do it as cheaply and as well as any one else you can have my work."

The union met and decided to follow his suggestion. With the aid of a lawyer they drew up articles of agreement. The company was capitalized at \$3,400, divided into thirty shares. After a year and a half the concern is doing a thriving business.

This last year has been very prosperous. Much of the time the men have worked thirteen hours a day. The men are paid by the piece, and receive, besides, their share of the profits of the business. So profitable has the concern been that the men have been required to pay only a small part of their original subscription. There are now only twenty-one shareholders and each owns one and two-thirds shares.

When differences arose in the shop they were referred to a shop committee. Each shareholder considered himself a capitalist and therefore did not spare himself. They suggested improvements and economies. The president acted as bookkeeper to save expense, and all stood shoulder to shoulder for the result.

Perhaps there is a suggestion in this successful experiment for a way out of labor difficulties. But it will be noticed that piece-work, which many unions condemn, was instituted, and the men worked thirteen hours while their neighbors fight for eight.

A LESSON IN FACTORY METHOD

A FACTORY expert who has been for more than a year examining the works of an old and well-known New England concern and suggesting changes and improvements, made this remark the other day:

"They were always interested in all the suggestions I made which would lessen the cost of supplies, but when I submitted a long list of new machines that in my opinion were needed the president's face grew long.

"Don't you think," he said finally, "that we can get along in many cases with the machinery we already have? Such an expenditure as this will hurt the year's dividend, and we can realize very little on the old machines if we try to sell them."

"Well, no," I said. "If you merely wanted to get along you didn't need me. And that isn't the American way. The reason we win is because we're willing to take big risks to do it."

"I guess you're right," he answered; "but that's a long list."

"He'll do it after awhile," went on the expert, "but there's quite a bit of old England in New England method."

THE LITTLE THINGS THAT COUNT FOR SUCCESS

IT'S often the little, unheard-of things that are making the great reductions in manufacturing costs," said a patent lawyer recently. "Only this morning a manufacturer, a workman and I settled the matter of two little wheels that the workman had invented for an automatic machine he had worked over in the employer's shop. No one will ever hear of it, but the little contrivance will save the manufacturer between forty and fifty thousand dollars a year, and the working-man won't have to mind the machine, either."

MAKING NAVAL CONSTRUCTORS IN AMERICA

THERE is a new proof of our growing efficiency in technical education, and one of national interest. Our naval cadets, who were to become members of the naval construction corps, were trained until recently at Greenwich in England. They are now being sent to Boston. The English school was closed to Annapolis graduates, but there were famous schools on the Continent ready to teach the cadets. A special course in the theory of war-ship building, however—from torpedo boats and gunboats to monitors and battle-ships—was established at the Massachusetts Institute of Technology last year. It is to serve as a complement to the four years at Annapolis, and it is without doubt entirely a success.

The Bureau of Construction and Repairs recently applied to Congress to increase the number of constructors from forty to fifty, and a bill was passed authorizing the appointment of two additional men in 1902 and four in 1903. These new constructors were needed to meet the increase in the number of the navy's ships. Whether a ship is being built in private shipyards, or in a navy yard, a

constructor is responsible to his superiors for the quality of every pound of material and the method of every hammer stroke and of the placing of every rivet.

The new course at Boston will be three years in length. It will teach the young midshipman everything he needs to know about designing and building a war-ship; and as soon as he is ready he is set to work designing a ship of his own to meet certain defined requirements. Once a week he goes to the Boston Navy Yard and either works as a mechanic or studies administrative details in the head constructor's office. He visits, also, the Fore River Yards, where the *Virginia* class battle-ships, *New Jersey* and *Rhode Island*, are being built. In 1901 three graduates of Annapolis were assigned to the Boston naval station to take the course. Last year four others entered the school. The 1901 men have all been appointed to the naval construction corps, and last year's men will follow in order; and unless an emergency arises each Annapolis graduate who enters will have three years of post-graduate work before he becomes a regular officer in the navy. And he will have taken his entire course in American schools.

THE MACHINERY OF MODERN FARMING

THE modern farmer, like the mechanic, is becoming merely the director of machines. At the barn and granary he is relieved of the tiresome task of shoveling the grain, elevators run by horse-power taking the loads swiftly to the top of the highest structure. Corn-cribs as well as wheat-bins are thus filled. Modern cribs made of wire and steel netting serve as corn depositories at the least possible cost. Indeed, there is a perplexing problem for the farmer who buys grain of his neighbor and has not the most improved machinery for handling it. The seller insists on a cent more a bushel for his grain if he must unload by the old-fashioned way, rather than at a "dump," as in an elevator or mill.

The introduction of the corn-harvester and the shredder has done much to revolutionize the handling of the corn crop. It was but a few years ago when the only method used for corn was to husk the ears from the stalk in the field, leaving the stalks to wither through the winter, at most furnishing a precarious rough feed for the cattle. It was shown by the experiment stations that not more than fifty per cent. of the value of the crop was utilized. Other ways of gathering have been introduced. A harvester gathers the corn in great bundles and, binding it,

places it in suitable shape for carrying to huge shocks. The field is thus left bare and ready for sowing to wheat. The shredder is a machine through which this corn is run. The corn is threshed as thoroughly as wheat, but, more than that, the stalks are chewed up into a hay-like material, called "stover," which is eaten by cattle and horses as easily as is hay. The corn is thus utilized to more than ninety-five per cent. of its worth, and the farmer is able with the same exertion to fatten nearly twice as much stock. Railway cars, filled from grain spouts at the country elevator in a brief time, are emptied by means of steam scoops run by compressed air or flexible shafts. These are worked inside the car, taking out almost the last bushel of grain with remarkable rapidity.

From the standing wheat, through the operations of the self-binder in the field, the self-feeder and self-measurer and loader at the threshing time, and the mechanical devices for handling the full loads at either end on the railway transit, only in the transference from scattered bundles to the separator is direct human effort needed. This of itself, in its saving of time and strength, brings consumer and producer closer and lifts the farmer to a more self-respecting position.

ELEVATING AND STRAIGHTENING RAILROADS

WHILE New York City is burying its tracks a number of the larger Atlantic coast cities are engaged in elevating theirs. This series of public works along our eastern highway from north to south is full of significance. It marks the last stage in the evolution of our once crude frontier railroad to the permanent form of the English right of way. Grade crossings are eliminated, curves straightened, and wood or iron trestles and bridges are replaced with masonry or with steel as rigid as stonework. Lifted twenty feet above the street level on massive walls based on bed-rock, our heavy modern express train may make its sixty or eighty miles an hour just as safely through city streets as in the open country. Time is saved, and danger to life and property is removed.

If some railway company were to reproduce the great pyramid, 756 feet square on the ground and towering 481 feet into the air, of solid masonry, and should raise it out of the heart of one of our large cities, it would occasion remark. When an equal mass of stone and earth is being handled in a track-elevation scheme no notice is taken of it, even though it be set down upon extremely valuable land. So the one-time wonders of the world are quietly surpassed.

More wonderful than the mere quantity of material handled is the way in which the engineers carry on their work without interrupting or delaying for an hour the tremendous volume of traffic passing over the right of way. Express trains, locals, local expresses and freights follow one upon another over temporary tracks until other tracks are ready at a new level, and the throwing of a switch turns the tide of commerce into the new channel. Great railway stations are rebuilt to suit the new track level without inconveniencing the crowds which use them.

The track-elevation work now in progress within city limits on the direct line between Boston and Washington will cost not less than \$50,000,000, and will probably amount to much more. An exact estimate is impossible at the present stage of the work. The D., L. & W. R. R. is spending about \$6,000,000 within fifteen miles of New York which would not be included in that estimate, but which forms a part of the great track-elevation scheme now being worked out. The city governments contribute a part of the expense, Newark, N. J., paying \$900,000, or less than ten per cent. of the actual cost of the work, to the three railroads elevating their tracks through that city. The New York, New Haven & Hartford are building great granite piers through Bridgeport, Connecticut. And these examples are only a few out of a large number.

MEASURING THE TEMPERATURE OF FURNACES

IN connection with many big enterprises—notably the manufacture of steel—it is frequently desirable to know the temperature of a molten fluid in a furnace. At temperatures easily attainable in the modern electric furnace no kind of fire-brick at present manufactured will hold together. The electric furnace easily fuses substances set down in the old chemical dictionaries as "infusible."

Carl Barus, an American physicist, of Brown University, has helped to develop a scientific principle commercially applicable to the measurement of high temperatures.

The method devised is this: Two wires of different metals—i. e., platinum and an alloy of platinum—are joined at one end. This junction is placed in the body whose heat is to be determined. Between the other pair of ends, at any distance, is placed a galvanometer. Owing to the difference between the temperature of the first pair of ends and that of the second pair an electric current is set up; and the deflection of the galvanometer needle serves to indicate the amount of the difference in temperature.

The French have devised an optical pyrometer. They observe through a telescope with a prism how, in the case of a body luminous with heat, new spectrum-rays are added with every rise in temperature, from the dull cherry-red of a low temperature to the dazzling white betokening a high degree of heat.

By such ingenious devices the necessity of plunging a fragile thermometric instrument into highly heated bodies is obviated; and the measurement of high temperatures inaccessible by means of ordinary thermometric methods becomes practicable.

A NEW LIFE-BOAT

COLLAPSIBLE life-boats have been invented and improved until the new boat for the navy, which was recently tested at the Brooklyn Navy Yard, seems to come near to filling all the requirements. First of all, it can be extended or collapsed in the water or out; it is practically impossible to capsize or sink it, and it carries provisions and has protection for its passengers. Cork and kapok give the boat its buoyancy, and the entire framework is covered with canvas for protection.

The fact that it can be opened in the water gives it a great advantage in the event of an accident in which a ship sinks rapidly, for the frame can be thrown overboard like a raft. If the ship sinks too quickly the lashings can be cut and the life-boat floats, ready to pick up people struggling in the water. The present life-boats are often crushed in the launching. This new boat can be handled easily and will stand all sorts of rough usage. Broken frame or torn canvas make no difference in its buoyancy.

The new boat, as it showed in its tests, can be extended or opened into boat shape in ten seconds. A ship meeting another in distress in a rough sea can, instead of "laying by" for calmer weather, have the life-boat hauled over as a raft and unfolded when there. The life-boat can carry sixty-eight people from a wreck to the shore without a possibility of swamping or sinking. Boats of the same size are not ordinarily allowed to carry more than fifty people. A life-boat that will not capsize, which cannot be sunk, and which can take whichever shape, raft or boat, is best for the conditions, seems to be a great advance over the boats now in use.

ONE EFFECT OF HIGH WAGES IN AMERICA

SOME industries in California which have failed are evidence that high wage rates, even with our tariff wall, prevent home supply in the face of competing imports.

Efforts to produce tea, silk, opium and perfumery are among these features. The local climate fosters the most satisfactory growth of these plants. They were introduced years ago with every promise of success. There was a famous tea plantation in California forty years ago that is famous among tourists for the thrift of the bushes, for tea-making stopped as soon as the first picking showed that the men employed could only earn for the employer about a fifth as much as their wages cost him. Wages have been lowered since then, but never low enough to enable a Californian to produce tea for the market price. It avails nothing industrially for California that the tea plant will grow luxuriantly anywhere in the valleys or foothills; the plant is an ornament and nothing more.

It is much the same with the cotton plant in California. In the interior valley the plant grows finely and the staple is exceptional in length, strength and fineness, but though occasional efforts have been made to gather it, failure has always come through lack of hands for picking. Even the effort to colonize blacks from the South failed because the people found other opportunities for more profitable labor. The very crop they were brought to gather went unpicked. Before it could ripen every black man was gone and employed elsewhere.

Silk-growing has been persistently pushed in California, enjoying at one time a State bounty for cocoons. So long as the State paid seventy-five cents a pound for them some were produced, but when the bounty lapsed production ceased. Silk could not be profitably produced with hired labor, but it was hoped that it might prove an acceptable fireside industry. Women and children could make money too easily in other ways. The large plantations of mulberries find their present functions in shade and firewood.

The opium poppy grows splendidly, but there is no labor to score the capsules and scrape the exuding gum. Hundreds have tried to prepare it and all have failed.

Perfumery farming, planning to market the subtle essence of rose, violet, lavender, tuberose, etc., has been a standing possibility for outdoor occupation in California, but has yielded nothing because of high wage rates. Even the vast quantities of orange blossoms which are produced in excess of all requirements of fruiting trees cannot be profitably gathered for the perfumers' processes. Perhaps a time will come when low wages along with low cost of necessities will make us able to compete with the foreigner.

THE BUSINESS OF SAVING TREES

PORTABLE outfits for threshing, sawing, grinding, hay-baling, etc., have long been owned by the operators and moved from farm to farm, performing expert services at contract rates for those whose skill or means did not warrant them in purchasing appliances and doing the work for themselves. In California this service has been extended to the destruction of injurious insects on fruit trees, and operators have found it profitable to secure the best machinery and materials, and the highest expert knowledge as well. The highest mark in professional insect-fighting is found in the use of hydrocyanic (prussic) acid gas. The fumes are deadly, and the tree must be enclosed in a gas-tight receptacle during its application. Roughly speaking, the method is to drop a tent over the tree to generate the gas in a dish of chemicals under the tent, and to allow the tree to remain in its gas bath for some time. While one tree is medicated others are being tented, and work proceeds uninterruptedly. This operation takes place at night. Sunlight or heat makes the gas destructive to foliage as well as insect. To work economically a number of men and tents are required. There is need, therefore, of organization and capital and a business head to the undertaking. In Southern California there are probably about thirty professional outfits. A single gang consists of four or five men. Tents cost about \$25 each, and each gang of men can use from forty to fifty of them. About \$1,500 would then be the cost of an average outfit, including teams and wagons.

Firms of "fumigators," as they are called, may operate a number of "gangs" and outfits, and one Los Angeles firm has as much as \$10,000 invested in its business. The cost of treatment depends upon the size of the trees, and contracts are made with growers at agreed rates—an average cost being about twenty-five cents a tree. Sometimes growers furnish the materials and contract for the application, and there is reason to think that the insect receives the hardest strokes when this method is employed. Some counties have purchased outfits for local use, and some growers operate their own, but professional "gassing" is the rule. There is also an application of the same business methods to the operation of outfits for spraying orchards. No doubt, to the development of such business methods is due much of the very successful work against insects for which California is well known. A struggle against an army even of insects must be organized and carried on with thoroughness to gain permanent success.

COLLEGE ENGINEERS AT WORK

TWO young men not long ago went West from an Eastern college. Boxing, lacrosse and football had hardened their muscle, and an engineering education had so sanely developed their minds that they buried their diplomas in trunks and met the West unaffectedly, with their coats off and their sleeves rolled up. They went to work in a copper smelter.

One became furnace-man's helper and, as he said, "didn't do much at first but extinguish John when his clothes caught fire from the red-hot spatters." But the second night—for he was working on the "graveyard" shift—the furnace-man defected, and the college boy, with his friend as helper, ran the furnace himself from his book knowledge. They watched the valves, kept the water-jacket of the slag-spout tepid, dodged the explosions of the molten metal, and at last prepared at midnight to tap the furnace and draw the slag from the settler, while the manager and the smelter-men stood about to see how the "tenderfeet" ran their "first tap." There was cheering when the operation succeeded. But the young men felt they had not yet been Westernized by initiation.

"Watch for something spectacular," said one to the other, "and when it comes, tackle it hard."

The next week he was down in the mine repairing a pump when a workman dropped a wrench into seven feet of cold, dirty, copper-impregnated water at the bottom of the shaft—the second wrench to be lost that day.

"Fish it out," said he.

They stared dumfounded. The "sump," or pool of water, lay at the foot of a slippery ladder; and no one in the gang could swim.

Chuckling, he undressed, while the miners gasped at his temerity, and creeping down the slimy rungs, he plopped off into the sump, dived, secured a wrench, came up for breath, dived again for the other, and came dripping up the ladder, to find himself an extremely popular youth.

The other was still a tenderfoot until one night the slag-spout of his furnace blocked and the furnace began to "freeze"—a costly accident, for a frozen charge of copper must be chipped away with sledge and cold-chisel. One had already frozen, and men had sledged away for five perspiring hours to clear it, the two young men among them. Afterward they had talked of the meaning of "work." One described minutely. He said: "Your legs don't yield. You sledge away till your grip on the handle begins to weaken; your

arms start dying; your back loses power; your stomach yields, and, last, your head. Finally you can't lift the sledge. You lean on a post and pant; for worlds you couldn't clasp your fingers around the hammer handle. Then you begin to 'come' again; and you go through it all once more. People who haven't tried it don't know how workmen feel when they work." Accordingly, when the slag sluice blocked and another round of sledging promised, the young man pondered to find a way out.

"What can be done?" said the superintendent, who had hurried up with a trail of workmen.

"Give me a pickax," said the college boy.

"Don't yer try it, sonny," said a workman.

But he took the pickax and a sledge, went down alone underground beneath the fifty-ton settler full of molten matte, and began hammering at the viscous obstruction. The superintendent held a stream of water from a hose upon him while he worked, but some of the spattering metal burned through his clothes, and his shoe-soles were slowly crisping. At last the slag, giving way, went rushing down the flume in a smother of steam and sulphur fumes, and the boy staggered out. His shoe-soles were burned away and his clothes were riddled with holes. The men cheered as he started home to change his garments. He was naturally happy, for he, too, was no longer a tenderfoot.

One of the two said afterward: "All these Westerners want is something theatrical." The other, blowing a puff of smoke, responded: "Yes, it's grandstand play." But each feat was a little more: it was showing an aptitude promptly equal to the occasion.

CONTRASTS IN NATIONAL INGENUITY

IN going over the Valdez Pass, by all odds the longest, most difficult and most dangerous path into the interior across the Alaskan mountains, the early pioneers of 1898 and 1899 had some difficult problems to solve in primitive engineering. The Pass is thirty miles long, and twenty-two miles of this are up hill. The rise is in a succession of "benches"—steep snow-clad trails from five hundred to five thousand feet long and inclined at an angle in many cases steeper than forty-five degrees.

The longest of these benches, called the "summit," presented the most difficult task. Men had not only to take themselves up this incline, but to drag also from one to two tons of food and utensils with them.

It forms a curious study in racial thought and ability to recall the various methods by

which this task was accomplished. The patient, dog-like, lower-class Swede took his fifty or seventy-five pounds on his back and toilsomely climbed to the top, deposited his burden, and returned again and again for another load. The Norwegian, more saving of his strength, carried his pack perhaps a fourth of the distance and made a cache. By making many short trips he gained frequent rests and accomplished more in the long run than the harder-working Swede.

The German, man of one idea, stuck to the sled that had brought him over the easier reaches of the Pass, and, carrying a bare forty pounds, painfully and slowly drew the load to the top, and then coasted down for more. Some Frenchmen, who were fortunate enough to possess a horse, drove him up with light loads until driven off the trail for spoiling it, and some Japanese tried pitching fifty-pound bags from hand to hand, but soon wore themselves out. They then imitated the American plan, which was as follows:

A strong stake was driven eight or ten feet into the snow a thousand feet up the incline, and braced with an additional stake and ropes. To the large stake was attached a block through which ran a thousand feet of rope. On each end of this rope was attached a sled. The sled at the foot of the incline was then loaded with from seven hundred to a thousand pounds of goods, held in place by the drag rope, which passed over the load from the rear and under the front bar of the sled.

Four men picked up the upper sled and thrusting short, tough sticks through it, grasped them under arms and literally "fell down" the hill, their weight drawing up the loaded sled, guided by its gang of four men. Arrived at the bottom, the empty sled was loaded, while the top sled was unpacked. The operation was then repeated, the men who had just worked getting a rest walking up. In this way, in one instance, fourteen tons of goods climbed the four thousand feet in two nights' work of ten hours. American ingenuity had seen that the necessary return trips should be made useful in some way, and that if gravity could be made to assist in the pulling, the precious strength of the men, so necessary for success later on, would be made to last longer and go further.

GETTING RESULTS AT ANY COST

A FIRE completely destroyed recently the plant of a manufacturing company of New England which manufactured emery and corundum wheels, used in every machine shop and in nine out of ten of all manufac-

turing operations. The factory possessed a large stock-room in the basement where sixty thousand wheels were kept, stored in racks. These wheels ranged in size from the tiny jeweler's wheel, half an inch in diameter and thin as a wafer, to the giant tool grinders four feet across and a foot thick.

Emery wheels are made by several different processes for different purposes, of emery of all degrees of fineness and into wheels of all degrees of hardness. The wheels are stored by size in racks, and arranged in these racks according to the number of emery and grade. When the factory burned down the stock-room was a mass of ruins and the wheels were buried beneath the debris of the burning building, but not much injured.

The company advertised that it would resume operations at a certain date, when the new building, on another piece of ground, was expected to be completed. As it happened, a blizzard so tied up the railroads that the expected material failed to appear, with the result that while the building was finished, the date of opening business found the stock-room still unstocked.

The fire and water had pretty well obliterated the paint marks on the wheels which designated their grade and the number of the emery, and as it was vitally necessary to know these it was decided that they should be put into the new room, marked and graded in as short a time as possible. One traveling man happened to be in at that time, and he and the superintendent, the only other available man, set to work to grade some forty thousand wheels. Grading an emery wheel is accomplished by laying it down on some hard surface and attacking it with a blunt tool, called a "digger." The "feel" of the slight give to the tool tells the skilled workman which of the fourteen degrees of hardness the wheel is. By looking at it the size of the grain is judged. These two men grading, two laborers for lifting and a boy for marking, graded and marked and put away the wheels in fifty-six hours, working without rest.

More men were not put on the job because grading is an art which few in the factory knew. The graders had to handle most of the wheels themselves, and each wore out three pairs of heavy buckskin gloves in the process. The smaller wheels were attacked first, and graded and marked at the rate of from fifteen to twenty a man per minute. The large ones required more time, as they had to be wheeled to the proper position, carefully lowered on the side and then accurately judged. The very large wheels, made by a chemical process, are much harder to judge than those

made by burning an emery composition in a kiln, and these took more time.

In fifty-six hours the job was done, and the next day a waiting pile of more than four hundred orders were filled from the stock which two days previously had been absolutely useless because they were unmarked and unarranged.

ANOTHER NEW FORM OF FUEL

IN Germany, France and Belgium the manufacture for fuel of briquettes—made of coal dust, lignite or peat mixed with a cohesive substance, such as pitch which is combustible, and formed into bricks under high pressure—has been an important industry for twenty years; and the small circular or cubical blocks are being very generally used in cooking-stoves and grates and even for power fuel. In America the industry has never been thoroughly developed, probably because coal has been cheap and plentiful. The recent coal strike, however, hurried the commercial production of briquettes in the United States to a great degree.

The material from which the American briquette is manufactured is culm—the fine coal which surrounds every breaker in mountainous heaps. This culm is valueless, for it is so fine that it packs tightly together and will not burn. To make it available in the form of bricks it is necessary to combine it with a "binder," as it is technically called—a liquid substance made by a secret process from oil and various distilled products of coal. The culm is first washed, then mixed with the binder and then subjected to great pressure.

These briquettes may be made in any size, according to the form of furnace in which they are to be used. They are ignited exactly as coal is ignited, and burn with a strong flame and with remarkable heat-giving power. Two attractive features of this fuel are that it gives off almost no smoke and burns with very little waste. The only residue is a fine ash without clinkers or cinders. It is claimed that careful experiments demonstrate that they possess greater heat-giving power, weight for weight, than the best anthracite and from three to four times that of dry wood or peat.

The chief recommendation of the briquette, however, is expected to be its greater relative economy. It is said that the cost of manufacture, including the raw material, is not over one dollar per ton, and that the product can be marketed profitably at a saving of from two to three dollars per ton over coal at the lowest normal prices. It is, among other things, a valuable new use of waste material.



MR. JOHN S. SARGENT
THE MOST EMINENT OF THE WORLD'S PORTRAIT PAINTERS

(See "*The March of Events*")

THE WORLD'S WORK

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The March of Events

THE historic event of the month is the making of the treaty with Colombia which ends the long preparation for the Panama Canal. When this paragraph is written, the treaty awaits only the ratification of the Senate, which now seems certain. The canal, therefore, is definitely in sight; for it must be begun within two years and be finished within twelve.

After more than a half-century of agitation; after long opposition from many quarters, in particular by some of the transcontinental railroads; after efforts made by private corporations; after the scandal of the French Panama company; after the abrogation of the old Clayton-Bulwer treaty with England, which stood in the way; after surveys, discussions of routes and endless debates; and after the silent opposition of some European, and the jealousy of some South-American, governments—at last the United States will construct and control an interoceanic highway for the incalculable and perpetual advantage of the commercial world.

It will be recalled that the act of Congress at the last session gave the President authority to conclude prescribed arrangements for a canal by the Panama route; or if this failed, to conclude arrangements for the Nicaragua route. The French canal company and all its property and rights will be bought with clear titles for \$40,000,000; and now a satisfactory treaty with Colombia is concluded. The Panama route, therefore, is selected.

By this treaty we are to pay Colombia \$10,000,000 for an exclusive franchise for one hundred years (renewable forever at our option), and after nine years an annual rental of \$250,000. We agree to the neutrality of the canal (as we had previously agreed with Great Britain); and although Colombia retains general sovereignty over the zone of the canal, we have the right to protect life and property there if she fail to do so. The agreement is satisfactory to our government in all its details, for it is fair and reasonable.

We shall, then, soon begin work on the canal, as already authorized by Congress; and we have been fortunate in securing the route that most engineers think best. By a total expenditure of more than \$200,000,000 we shall, within a few years, have made it possible to sail, as Columbus set out to do, almost due west from Spain and reach Asia. A great new way will be opened between east and west that will radically change the commercial geography of the world for a large part of its inhabitants. Such an event has not happened many times in human history.

SECRETARY HAY'S CONTINUED TRIUMPHS

AGAIN Secretary Hay has won the thanks of the nation—this time by this agreement with Colombia about the canal. It was he, it will be recalled, who concluded with Great Britain a new treaty that got rid of the old Clayton-Bulwer treaty which so long stood in the way of any isthmian canal.

Again, in his work looking toward a satisfactory settlement of the long controversy with England about the Alaskan boundary, he has opened a way of hope for the end of that old trouble. From his dealings about the invasion and occupation of China to his remonstrance against the expulsion of Jews from Rumania, Secretary Hay has continued to earn the eulogy of Harvard University as the foremost living diplomatist. Every year, under his direction, it becomes plainer to the world that American diplomacy means fair dealing; and this is a great national gain.

Every student of public events whose memory goes back no more than a dozen years will thankfully bear witness to the change that has taken place in our foreign relations. We were then under suspicion when we were not in contempt. Our dealings even with Great Britain were difficult. We were always wrangling over inconsequential international affairs, and we never seemed to reach clear conclusions. The most tiresome and apparently the most ineffective part of our national administrations used to be the Department of State.

Many influences have contributed to the happy change. We have asserted ourselves; we have grown richer; we have made a commercial "invasion" of other lands; we have built a navy; and we have cut a bigger figure in the world in several ways. But, after all, it is men that mold events; and wherever any notable thing is done you will find a noteworthy man. The just, frank and persistent personality of Secretary Hay has been felt and respected in every capital in the world; and he has won a place in our history and among the greatest international statesmen. He has given new character to diplomacy.

GOVERNOR TAFT AS AN EXAMPLE OF THE SUCCESSFUL PUBLIC SERVANT

AND, since it is pleasant to write in praise of good men, what an example Governor Taft has set for patriotic youth for all time to come! A good student of the law and a successful judge, he had as the ambition of his life a seat on the Supreme Bench of the United States. He was in the direct line for such a promotion if vacancies should occur, when he was appointed chairman of the present Philippine Commission. But from a sense of public duty he accepted the uncommonly difficult task of leading the

Philippine peoples out of the chaos of war and ignorance to orderly government. When he accepted this post the difficulties were greater than beset any other public task that we had in hand. It was not clear what could be done. It was not even quite clear what we wished to do. Congress had enacted no Philippine legislation. The whole problem was yet a military one; and public opinion in the United States was divided. We were making our way through a fog. But Judge Taft, with his capable co-commissioners, took the task in hand and began the work of constructing an orderly government—of making a civilization where civilization had never been. What they have done is a great piece of constructive work, and the first piece of such work that has been done by a democratic government with an Asiatic population. For this reason its far-reaching value cannot yet be estimated. It is too soon to say that it is the beginning of a new era in the history of the Orient; but it is not extravagant to say that it may turn out to be so.

When Governor Taft came home ill last year, he again consulted, not his personal comfort or safety, but only public duty, when he returned to his post. A few weeks ago the President offered him the appointment to the vacancy on the Supreme Bench caused by the retirement of Justice Shiras; and his old ambition was at last within reach. But the whole people of the Philippines, as nearly as they can be represented by residents in Manila—English, Spanish, Tagalog—made a great demonstration to show their wish for him to remain; and 6,000 Filipinos "of all political and religious parties," begged him to stay. He declined the appointment and remains Governor of the Philippines.

Judge Taft is yet young enough reasonably to expect other opportunities to become a Justice of the Supreme Court; but—without holding lightly the great dignity and worth of the Court—it may be said that his present post, since he has given it meaning and power, is as honorable and as important as any place in the public service. To build up at last a self-governing people out of the Philippine tribes is constructive statesmanship of the highest kind. It is worth remembering that this great opportunity came to him simply because he took up cheerfully the public task that was assigned to him and did it with all



Photographed by Frances Benjamin Johnston

MR. WILLIAM R. DAY

RECENTLY APPOINTED JUSTICE OF THE UNITED STATES SUPREME COURT TO SUCCEED JUSTICE SHIRAS, RETIRED

(See "The March of Events")



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MISS KELLER, THE DEAF AND BLIND AUTHOR, READING HER TEACHER'S LIPS

Miss Helen Keller

Miss Sullivan

Mr. Joseph Jefferson

(See "The March of Events")

his might and with the highest patriotic aims. He found this great opportunity for an historic career simply by following public duty.

THE MATTER WITH SOUTH CAROLINA

TILLMAN, the ex-Lieutenant Governor of South Carolina, who a year ago won unenviable notoriety by his gross discourtesy to President Roosevelt, had been roundly abused at home by Mr. Gonzales, the editor of the *Columbia State*, which is the principal daily paper at the capital. A few days before Mr. Tillman's term of office expired he walked from the state house down one of the principal streets of the town and, when he met Gonzales, fatally shot him in cold blood. Tillman, who had two revolvers, was put in jail. There is a general feeling of shame and indignation; a subscription has been started to erect a monument to the dead editor; but the prevailing opinion is that the murderer will not be hanged.

The calm people of South Carolina are entitled to the sympathy of the country for the unwelcome notoriety that the State again suffers. It has not been many years since Mr. Dawson, the editor of the *News and Courier*, in Charleston, was murdered; and his murderer went unpunished. The bully has brought disgrace on the State from the time when Brooks, a South Carolina member of Congress, struck Sumner on the head with a cane in Washington, and he continues to disgrace the Commonwealth.

Now, there are many good men in South Carolina—men whose standards of civilization and of personal conduct are the same as those of good men elsewhere. The State is not a frontier community. It is one of the Original Thirteen. It has long been the home of a cultivated society. Why is it, then, that the bully has survived—that men take the law in their own hands, and that murderers are not punished there?

The argument in detail would lead far and would reach over a long stretch of history. But the general fact that explains the State's degradation is that human life is held, and has by a large part of the population always been held, cheap; and it is held cheap because all men are not considered to have the same rights and privileges. An individual assumes that he and not the organized community is dominant; and the organized community has not asserted itself strongly

enough against such an individual assumption. In plain English, the democratic theory of society is not in favor. It is not accepted in the daily life of the people of South Carolina. Such a community is as far off from modern American ideals as a community that existed a century ago.

The remedy is in education. Education means the free right training of every child in the Commonwealth; but it means a great deal more than this. It means the assertion of the community against the lawless individual—the community's authority against individual authority. The State must tax; it must educate; it must punish. It must give every individual the same privileges, the same duties—put them on a level.

An aristocracy in a democracy means a group of a few privileged persons; outside this group, the bully; behind the bully an ignorant populace that will elect the bully to office, will hold him in honor and will acquit him of crime. There is yet something structurally wrong in South Carolina, and the many good people of the State have the sympathy of the country in their efforts to reform their social structure. They can do it only by building up all the ignorant and neglected classes. Then a Tillman could not be a hero, he could not be elected Lieutenant Governor, he would not be even tolerated, not to say admired and acquitted. No State can rise higher than its average man, no matter how high the personal conduct or how gracious the civilization of some of its individuals.

THE AMERICAN FEELING TOWARD GERMANY

GERMANY has not made a happy impression on the world by her conduct in the Venezuelan trouble. The popular feeling in England against the English-German alliance ran high, and it was regarded by the best opinion as a most grave and dangerous error of the Government. Again Mr. Kipling struck the note of national feeling in "The Rowers," his spirited verses against the compact. The Prime Minister of England felt obliged to declare that the alliance was "a mere casual coöperation for a specific purpose in a limited time."

Opinion in the United States has been singularly tolerant, and the Administration has been patient and careful to an admirable degree. But the undercurrent of American feeling has been one of suspicion.



BARON VON STERNBERG
THE NEW GERMAN ENVOY TO THE UNITED STATES

Photographed by Frances Benjamin Johnston

(See "The March of Events")

The suspicious attitude of the German admiral toward Admiral Dewey at Manila is recalled. German conduct at Samoa, too, is remembered. The recent storming of the forts in the bay of Maracaibo during the Venezuelan blockade (in spite of the explanation offered by the German Government) had the appearance of unnecessary hostile activity. The anti-American feeling also that found expression in Germany during our war with Spain is remembered. And there is no need of a reminder of the German dissatisfaction at that time with the close relations between England and the United States.

Now all these events and incidents are probably the results of the German temperament and of the ignorance of the German official classes of our institutions and methods—the outcroppings of militarism. Rude manners are natural results of a military bureaucracy. Germany is “cocky”—to a degree theatrical. Witness the dress-parade and the pomp and the triumphal manners of the German Commander-in-Chief of the Allied Armies in China—in a war that, after the Commander arrived, was opera-bouffe when it was not the wanton murder of helpless Chinese. Military Germany reflects and exaggerates the war-lordly manners of the Emperor. Wherever his soldiers march or his navy sails there is boasting, if not violence.

This military spirit cannot ever quite fall in with the American spirit. It was easy to see during Prince Henry's visit how ill the German of official life understood the American character. In spite of the genuine courtesy that was shown on each side, there was an obvious difference in the point of view. The American people were less impressed than the Germans thought. There was no lack of frankness. Certainly there was no intention to deceive. But the greetings of crowds, private hospitality, official and personal heartiness—all these are a mere pleasant show, and they mean next to nothing in American politics, domestic or foreign. The character of the American people shows itself in other ways; and a Prince's visit and welcome cannot mean the same thing in a democracy as they often mean in monarchical countries.

The present suspicion, therefore, may spring wholly from German military manners and a lack of knowledge of the American character. For Germany has time and again declared, probably in good faith, that

she has no colonial plan that looks toward the acquisition of territory in South America. Her policy is to build up her own industries, to strengthen herself at home, to hold herself strong between Russia and France.

Yet while the good faith of the Kaiser's Government toward the United States and its friendly feeling need not be doubted, we cannot forget that there is a strong push of the German people outward. They need markets. There is a strong economic pressure for more room; and economic pressure has many a time proved itself more powerful than kings and parliaments, to say nothing of mere diplomatic declarations.

While, then, it would be inaccurate to call the present feeling in the United States by any milder name than suspicion, and although Germany's bad naval manners and her lordly ways in dealing with a weak nation recall bad manners on previous occasions, a suspicion of unfriendly intentions may be unjust. Let us hope so, and forget the whole incident. But Germany must remember that these ways are not pretty ways, and the Monroe Doctrine stands.

BARON VON STERNBURG, THE GERMAN ENVOY

THE coming of the new German Envoy, Baron Speck von Sternburg, for the immediate purpose of representing Germany at Washington during the Venezuelan trouble, is taken as evidence of good-will to us; for he has had unusual opportunities to understand American character and institutions. He was born of an English mother and he spent a part of his childhood in England. His father, although a man of aristocratic lineage, took part in the revolutionary uprisings in Germany in 1848-49 and found it prudent for a time to expatriate himself.

The son (the present Envoy to the United States) had a military education, won military honors in the Franco-Prussian war, and was decorated with the iron cross on the battlefield of Sedan. Having left the army, he pursued political and economic studies, and at twenty-eight years of age entered the German diplomatic service. All his experience as a diplomat has been in English-speaking countries; and, while he was attached to the German embassy at Washington about six years ago, he married an American lady. He was the Kaiser's special commissioner to Samoa, where he had a difficulty to settle with

representatives of the American and English governments. He is regarded as the German diplomatist who knows, perhaps, better than any other, the thought and temperament of English-speaking nations, with an especial knowledge of the United States. If he should be promoted to the rank of Ambassador to the United States—to succeed Baron von Holleben, who yet holds the post, although he is absent from the country—his promotion would be interpreted as evidence of the German desire to understand and to be understood by the American people.

"TO INTERFERE WITHOUT INTERFERING"

THE further the Venezuelan trouble has gone the plainer it has become that South America is right at our doors. Even a little while ago these countries seemed somewhat far away. They were removed from our special concern except at long intervals and because of our trade with them. Now they press much closer.

While the conferences at Washington about Venezuela were going on, our Government was asked by nearly all the Central American governments to afford some sort of protection in case of grave domestic disturbances which they feared. The tendency will become stronger for these weaker governments to look to us for protection when they have trouble; and, but for very careful diplomatic work, the European governments would assume that our Government must in some way and under some conditions or at some time be to some extent responsible for them.

It is a delicate task always to maintain our historic relation to the South and Central American countries and yet not indirectly at least to help their credit or standing, and thereby to seem to assume obligations that we have no thought of assuming. When they get into trouble with European creditors, we have to set bounds to the actions of these creditors. We make it more difficult for them to collect their debts; but we cannot help them to collect them; and the debtor countries must not be allowed to strengthen their credit by our concern for their territory. Theoretically, our position may, under certain conditions, seem an impossible one; and it will require even greater diplomatic care in the future than it has required in the past to "interfere without interfering"—for this is a defini-

tion that was once given of the Monroe Doctrine.

CHANGED OPINIONS ON THE RACE QUESTION

THE most noteworthy fact shown by the discussion of race-politics in the South that has for some time been going on is the change of opinion in the North and the change of expression in the South during say, the last ten years.

In the North the dominant feeling now is that the problem is the South's own problem, and that the South must work it out. There is no disposition in the North to repeat the missionary and reconstruction experiments of the early days of freedom. There would have been a very general approval of a restriction of the suffrage to prevent ignorant domination—if ignorant white men and ignorant Negroes had alike been excluded. There cannot be found in any influential quarter a wish to force "Negro domination" on the South.

But dominant Northern opinion yet holds firmly to the doctrine that no political discrimination should be made against the Negro simply because of his color or race; that (deprived of the ballot as he may rightly be—along with ignorant white men—so long as he is ignorant and in arrears for taxes) he shall have the door open to him for all the privileges of citizenship when he is worthy; and that when he proves personally fit he shall not be excluded simply because he is a Negro.

This is believed to be a fair, if blunt, statement of the present dominant opinion in the Northern and Western States. But in most of these States the interest in the subject is less than it was when the South was a burning question in national politics. If the South will only manage the matter without doing violence to the Constitution and without denying the Negro a chance to rise, Northern and Western opinion will not again greatly concern itself about it.

In the South, too, there has been a decided change of temper. President Roosevelt has appointed fewer Negroes to office in the Southern States than President McKinley or President Harrison appointed, not to speak of preceding Republican Presidents; and there are fewer Negroes holding public offices in the South now than there were when Mr. Roosevelt became President. Those that he

has appointed are acknowledged, too, to be of a higher level of personal worth than most preceding appointees were. Yet there has been a louder outcry against him in the Southern States for his attitude to the Negro than there was against any of his predecessors for more than twenty years. What Southern opinion accepted from President McKinley and President Harrison, and acquiesced in, it resents from President Roosevelt. He gets no credit for appointing better Negroes and fewer of them than his predecessors appointed, but only blame for appointing them at all.

This change in Southern political temper has followed the recent campaigns in many States to restrict Negro suffrage. These campaigns emphasized the subject. Every other political topic was put aside. The popular cry was "white man's rule," which, in the minds of many white men, came to mean that no Negro shall ever hold any office. The agitation to prevent "Negro domination" seems to have produced a determination to deny the Negro any part in politics. He may vote when his vote cannot change an election. But he may not hope for political "recognition" nor for office—even the humblest. This feeling is expressed sometimes thus bluntly, sometimes more gently; but it is the present feeling at least of most of the political spokesmen of the South.

There is, therefore, yet a difference between opinion in the two sections; and the pivot of the difference is—whether the Negro shall be excluded from politics because of his race.

On one side the Fifteenth Amendment stands as a part of the fundamental law, which forbids discrimination in suffrage on account of race. On the other side stand the suffrage-restricting amendments to several Southern State constitutions. If they dealt alike with white and black men, there would be no doubt about their constitutionality in spirit or in letter. But they do not deal alike with white and black men; and, if they mean what the present Southern opinion signifies, they are meant to exclude Negroes only. They are in intent and in effect violations of the Fifteenth Amendment, whether they are ever declared to be violations or not.

Here, then, is the conflict between Southern and Northern political opinion and purpose—a conflict that is real.

LARGER FORCES THAN RACE POLITICS

ARGUING from such a bald statement of the conflict of opinion about Negro suffrage, a man who did not know the subject historically and who did not know the people in the South might conclude that there is grave danger ahead. Grave enough the problem is—there is no doubt of that. But it is less a constitutional argument or struggle than it is a practical problem which is working itself toward solution by the forces of every-day life.

The South is prosperous. There is a growing liberality of opinion—on all other subjects at least. The industrial relation between the races is becoming constantly closer. Except where there is a political controversy, a man might go through the whole South and never find any evidence of race hostility. The Negroes are acquiring property. The industrious and well-trained among them are acquiring also a steadily increasing influence in their communities. The State support of Negro education is everywhere more liberal than it ever was before. The best white men and the best black men are everywhere working together for the building up of the country and of the people.

In spite of the dominant political feeling as it expresses itself in party and sectional controversy, politics is not the whole of life even in the South. It is, in fact, a small section of it. Industry is a much larger section. Education is a larger section. The natural kindness of both races and their dependence on each other are more important facts than Federal offices. The outlook, therefore, is not dark. There is, on the contrary, every reason for hope of a steadily growing coöperation of white and black.

There are many influential Southern white men of the best type who do not assent to the exclusion of the whole race from the suffrage; and such an absolute exclusion will not take place. It is by the work of wise men of both races, done mainly in silence, that continuous progress is made, and not by political agitation.

Until the Negro was practically disfranchised there had been a complete political deadlock, each race always voting solidly against the other. There was no political virtue in that. The experiment is now to be tried of encouraging a division of opinion, and of building up parties that shall not be parties

by race. Time will be required to test the experiment. But in the meantime, politics seems likely to continue to be, as it has hitherto been, the least fruitful of Southern industries. The work of constructive statesmanship is done there in other ways.

HOW RACE POLITICS NARROWS THE HORIZON

OF course, the blacks who can read and have paid their taxes are not formally disfranchised, and there is no reason to fear that they ever will be. As matters now stand, then, the doors of political privilege are open to them. But we are at the beginning of a new experiment in race politics, for the hope is that the white vote in the South may be divided between two parties, and the Negro vote also will cease to be solid.

This is the result to be hoped for; for it is this solid Negro vote and the consequent solid white vote that have shut the South out from the broad currents of national life. A man in a Northern or a Western State may hold an opinion about the Negro in politics, but he does not concern himself greatly about it. There are other subjects that he cares more about. This is remote from him. Not so in the South. A man who lives in South Carolina, or in Mississippi, whatever his opinions are, finds himself less a part of the great country and of the stimulating time in which he lives than a corresponding man in Ohio or New York or Michigan. He dwells in a shadow, apart, somewhat detached, do what he may. The Negro problem overwhelms him. Go wherever you will in the South and most of the talk that you will hear will be about it. Patriotic youth (and Southern youth abound in patriotism) hear it almost to the exclusion of other public subjects. They read about it in their newspapers. They grow up under its shadow, and they fail to get the wider vision that makes American life today more stimulating than life in any country has hitherto been. This is the pity of it.

Now there are as thoughtful and as earnest men in the South as in any other part of the Union; and the whole country has as great need of their contribution to its character and thought as it has of the contribution of similar men in other States. But the whole country now loses it, just as these more or less isolated men lose the stimulus of a strong national feeling.

These paragraphs do not rise to the dignity of suggesting remedies. They merely chronicle conditions. But the remedy for the conflict of opinion, for the solidity of race-parties, for the lack of a wide enough national spirit, is the training of all the children to useful work and to clear thinking and the opening of the door of equal opportunity to every one. The next generation will then be wiser than we are, and they may find that many problems that disturb us have solved themselves.

THE NEGRO HIMSELF

MEANWHILE, in most of this discussion of the race problem little is said of the Negro's own point of view. He is the chief figure of it all. He is at once the innocent cause of it and he must be one of the chief factors in its solution.

(There has not been time enough nor work enough nor money enough nor opportunity for great masses of Negroes to be built up to responsible citizenship, but the leaders of the race—the real leaders—show a steady growth in thrift, in responsibility and in good citizenship.) A study of the result of the work done at any of the great schools where they are properly trained will give the most despondent man good hope. In fact, the records of the best men and women who have gone out from Hampton and Tuskegee and other such training places makes one of the most remarkable chapters in human progress. The Negro conferences that are held at Tuskegee show year after year growth of character and of economic efficiency among large masses of them; and the reports of the Negro Business Men's League and other such bodies tell of remarkable progress.

Useful and responsible black men—as far as their opinions have been expressed—have as a rule not opposed a restriction of the suffrage. They have objected only to an unfair discrimination against the Negro. They would assent freely to any restriction if it applied alike to white men and to black. They want the door open to the personally worthy and fit—without regard to race.

The Negro's children, too, will be wiser than he is; and, after all, this whole problem is not one that we who are now living shall see the end of. If we pass it to the next generation in a better shape than we found it—that is all we can hope to do. And no man who knows Southern life can for a moment

doubt that it is now in very much better shape than it was twenty years ago. So much better is it that the aspects it now presents are not permanently discouraging to those who know what has been done.

But one thing is fortunate and certain and necessary—the door (in industry or in politics) is not shut and must not be shut on the worthy individual, be he black or white. That would be a denial of American institutions.

THE APOSTOLIC SENATOR FROM UTAH

THE United States Senator-elect from Utah, Mr. Reed Smoot, is an apostle of the Mormon Church. He is not a polygamist. He is an energetic, honorable and successful man of affairs—merchant, miner, manufacturer and banker. But the word "apostle" strikes harshly on Gentile ears.

The New Testament title is somewhat misleading. The twelve apostles of the Church of Latter Day Saints are not a particularly ecclesiastical body. They are rather the Board of Directors of the church's many secular activities; for the Mormon Church is, first, a very successful business organization, and, second, a religious body. Some of the apostles give their whole time to the church. Others, like Mr. Smoot, serve it chiefly in an advisory way. His temperament, his training and his appearance suggest ecclesiasticism no more than the temperament, the training and the appearance of the Wall Street broker. But the apostolic office, as might be expected, seems to have an effect even on a practical man's vocabulary. Mr. Smoot said when he was elected Senator:

"I hold that the Constitution of the United States is divinely inspired; that under the folds of the starry flag freedom reigns supreme; and that my first duty is to my country, whose laws and institutions I love, honor and respect."

Of course the serious question raised by his election to the Senate is what, in secular language, may be called the boss-hood of the church. Before he could accept any office he was obliged to get the consent of the quorum of the twelve apostles; for the church does control politics as well as industry in Utah.

This is objectionable. But it differs in no essential way from the boss-hood of party "apostles" in many States. It violates no statute. It gives no sufficient reason for excluding Mr. Smoot from the Senate or even

for talking about excluding him. He is simply another boss-made Senator; and his bosses happen to be apostles whose speech is somewhat more Biblical than political. But the difference is unessential.

THE CHARACTER OF OUR ARMY

BETWEEN the agitation carried on by the peace societies and the demand for Congressional appropriations for new battle-ships, every American citizen at some time asks himself what the nation's duty is in self-defense. Warned of the danger, on one side, of a military spirit, and on the other side of the peril of insufficient preparation—where lies the truth of the matter? What is the sensible course for our Government to pursue? Does readiness for war make for peace, or does it tempt to quarrel?

Let a man read all the peace literature that he can find, and then let him read Secretary Root's speech at Canton, Ohio, delivered at the celebration of Mr. McKinley's birthday on January 27th, and he will find it hard to resist the Secretary's logic; he will be sure to feel a pride in the record of the army.

Secretary Root read despatches, that had not before been made public, from two thousand Chinamen in Peking when it was held by foreign troops, praying that the little American army be kept there till all the allied forces should be withdrawn; because American authority fed the starving, and brought better sanitary conditions than the city had ever known, and prevented the people from "being harmed, robbed and badly treated, and," the despatch said, "we can continue our business with content."

A despatch bearing similar testimony was sent by President Palma of Cuba when he was inaugurated, and another by the leading native officials at Manila about the retention of Judge Taft as Governor.

Mr. Root declared that

"The establishment of those governments in far distant China and the islands of the East, making for peace and justice and ordered liberty by the American army, is a greater achievement than the winning of any stricken field, a just cause for pride by every American citizen, and a just title to confidence, respect and gratitude by every officer and soldier of the army of the United States."

His spirited defense of the character of the men and officers of the army is convincing. The army does not make itself a political agent; it does not become the personal fol-

lowing of any leader; in no way does it endanger our liberty.

"The officers of the army conform in their character and conduct to the purpose for which the army is maintained and the character of the people from whom they come. I wish to say to you, not in the language of rhetoric, but as a sober statement of what I have found by careful observation, that they are free to a degree which I never dreamed of until I commenced to know them, from the vices and the greater defects which have prevailed in most armies of the world during all history. They are a temperate set of men. They are free from the vices of drinking to excess than most any other class I know of in this country. They are free from the vice of gambling. No such thing as dueling, which disgraces and deforms many military services, maintains in our army. The man who is dissipated is out of favor, and the public sentiment of the officers of the army is opposed to dissipation and excess, and it is an offense which is punished in our army by court-martial if a man does not pay his honest debts."

THE BEST PEACE MILITARY ORGANIZATION IN OUR HISTORY

SINCE we pretend to have an army and must have one, it would be inexcusable not to have an efficient organization; and now for the first time in peace, in our whole history, we have such a one. Whatever befall us, we are not likely again to suffer the horrors of the little war with Spain. The enemy did us little damage; but disease, incompetent leadership, lack of preparation and lack of transportation cost thousands of brave lives. This was murder.

The bill for a general staff, for which the War Department has long worked, will now become a law, and under this the army organization can be made very much better. The instruction both of officers and of men is better than ever before. And Congress has passed a law for the organization of the militia—a measure of a kind that has been insisted on almost continuously since Washington proposed militia legislation in his first message to Congress.

The new law makes the militia a potential part of the army—really and not merely in theory. The strength of the militia of the several States is nearly 110,000 men and nearly 9,000 officers; and there are more than 10,000,000 men in the country available for military duty.

To regard ourselves as possible soldiers does not foster a spirit of combativeness, but it does give us respect for our army, and it keeps us alive to the need of proper organization. It was the neglect and indifference of

public opinion that caused the shameful loss of most of the men who died during the campaign against Spain. The cost of our well-organized peace army of less than 60,000 men is not one dollar per capita, and it is a tax of less than one-tenth of one per cent. on the property of the people.

The three greatest forces that make for peace, as the world now is and as we play a part in it, are—the Hague Tribunal; a military organization that shall make a United States army quickly available, to be formed about the little army that we maintain in well-drilled efficiency—in other words, preparedness; and most of all a manly and robust determination not to fight but to make other people afraid to fight us. Then we shall have neither a dangerous military spirit nor a flabby sentimentality.

A HERO WORTHY OF REMEMBRANCE

DOCTOR BRISTOW tells in this magazine the heroic story of the work done in Cuba by the members of the United States Commission which discovered the method of transmitting yellow fever. The disease can be carried from a patient to a well person only by mosquitoes. Personal contact and clothing do not transmit it. This is one of the most important discoveries of recent times, and it was made by men who freely gave their own lives to the investigation. They permitted themselves to be bitten by infected mosquitoes, and they died that the truth might be discovered.

The head of this Commission was Major Walter Reed, who recently died, leaving his family ill provided for. It is due to him as much as to any one man that we shall never have another scourge of yellow fever. When this paragraph is written a bill is pending in Congress to grant a pension to his family—a poor debt of gratitude at most; for here was a man of heroic temper.

THE PRACTICAL END OF PROHIBITION

THE abandonment of prohibition in Vermont at the recent special election and the substitution for it of a system of local option and high license has more than a local interest. It is interpreted as the practical end of prohibition everywhere.

In Maine and Vermont it has had a longer trial than anywhere else, for the Maine law has now been in effect for fifty years. It is,

in fact, a part of the constitution of the State. Most of the other States that tried the prohibitory system have either abandoned it or their experience has been for a shorter time. But in these rural New England States two generations have grown up under prohibition. Few men now living there clearly recall any other state of society.

The judgment of scientific students of the subject has for some time been very clear that prohibition is a failure—that it does not prohibit, but that it does bring unexpected evils with it. Now that the people have abandoned it in Vermont—although the majority was only about a thousand votes out of sixty thousand—it is abandoned for good. It is a sort of declaration that the prohibition experiment has been sufficiently tried and that it failed. And it is not likely to be tried in any State where it does not now exist.

High license is them ethod now most approved for regulating the traffic. But local option laws are in force in a good many States, and there are many small communities where prohibition has been successfully carried out. Cambridge, Massachusetts, is such a community, and it has been successful there because Cambridge is adjacent to the city of Boston. The dispensary system, which was first tried in Athens, Georgia, and is now in force in South Carolina and in some parts of some of the adjacent States, works well. Local option, high license and the dispensary are likely to be the approved methods of dealing with the subject in the future.

THE PAY OF PUBLIC SERVANTS

BY the new law increasing the salaries of the Federal judges, the Chief Justice of the Supreme Court will receive \$13,000 a year, the Associate Justices \$12,500, the Circuit Judges \$7,000, and the District Judges \$6,000. In the large commercial centres, where these sums are very small incomes for men of ability, there has been criticism of Congress for not setting them higher when the subject had once been taken up. In comparison with the sums paid to corresponding judges in almost all other countries and even in some of our States, these are niggardly salaries, and they are niggardly in comparison with the incomes of most lawyers of distinction who practise in the Supreme Court. Nearly all our public

salaries are low. Scandalously inadequate are our ambassadors' and ministers' salaries.

But any discussion of public salaries raises a question that has two sides. If places of great dignity yield high pay, they may be sought for the salaries; if they yield low salaries, too many of them may be filled by men chiefly because they are rich. The theory is that the salary should enable a poor man to accept the place, but not tempt him to seek it. This theory would be sound but for one reason: it does not permit a poor man who dies in the public service to make provision for his family.

We have reached a degree of well-being where almost all competent men, except college professors and public servants, may accumulate a small fortune by middle life, and the Government—especially the National Government—ought to be much more liberal in paying its high servants. There have been many pathetic instances in the family life of great men who served our country for less pay than many a book-agent earns. The dignity of the government demands a new and more liberal policy.

THE WELL-PAID AND WELL-TREATED WORKMAN

IN the London *Times* in recent months there has appeared as clear and accurate an explanation of American industrial success as has ever been made. The emphasis is laid on the right facts. Consider these statements, for example:

The *Times* correspondent found that an American manufacturer of shoes knew exactly what every process cost. He knew the cost per shoe of driving tacks and of inserting eyelets. He knew the cost per hour of every machine. He knew the cost of every piece of material—of the thread that goes into every shoe. With this exact knowledge he knew precisely what quantity of work every machine and every workman must turn out every hour to yield him a profit; and he knew, of course, what wages every workman really earned. By a simple calculation from all this exact knowledge it was demonstrated both that the American workman received more pay than a corresponding English workman, and that the shoe cost the American manufacturer less than the corresponding shoe cost an English manufacturer.

The other fact upon which emphasis is laid

is what may be called the democracy of American industry—"In America employer and workman seem to be closer together than they are in England."

These characteristics of American industry have many a time been pointed out in this magazine and elsewhere; but they are so fundamental that we cannot ourselves be reminded of them too often. They are the two most important facts that the foreign study of our working ways have properly emphasized. They both come to this at last—that democratic treatment and a chance to earn as much as possible make men more productive. This is the secret of the advantage that American methods have. And every industry may have it in proportion to the wisdom of its managers.

CAUSES OF BUSINESS FAILURES

BRADSTREET'S commercial agency keeps a record of business failures in the United States, classified by causes, and the percentage of failures that is set down under each cause is approximately the same year after year. Lack of capital last year brought most of them—almost one in three; incompetence, one in five; "specific conditions," about one in six; fraud, one in ten. It is noteworthy that only about one failure in a hundred was reported as due to extravagance, and about the same number to speculation. Unwise credits and the failure of others caused each about one failure in thirty. Competition is assigned as the cause of only one failure in every twenty-seven.

These reports, so far as they may be relied on to show true causes, speak well for the industry, the avoidance of speculation and the general honesty of men in commercial life. They indicate their daring (or folly), too, by showing how large a proportion of failures is due to insufficient capital. Men dare fate by undertaking enterprises beyond their means and credit. Even this folly shows a good tendency—the tendency of men to go into business for themselves; but in the modern organization of business, capital becomes increasingly necessary.

Yet men do every year begin with very small capital what turn out to be very great enterprises; for the man is the main factor in success, after all—almost the only factor worth counting. And it is also true that it is easier now than it ever was before for

men who show successful qualities to get capital. But the ease with which it may be got varies according to a man's place of residence, and especially according to the wideness of his acquaintance.

There can be no exact science of success, but the hint that this table of wrecks gives is that a man of character and good judgment who by his native endowment will avoid the perils that beset incompetence, needs to make very sure of enough capital, and then that competition need not frighten him.

THE PREVENTION OF RAILROAD COLLISIONS

ALMOST at the same hour on the same day a few weeks ago there were deadly collisions on the Southern Pacific Railroad near Vails in Arizona, and on the Central Railroad of New Jersey, near Plainfield, both clearly caused by carelessness.

The New Jersey engineer passed a signal without seeing it because the steam obscured it. If the engine was defective there was fault also in using it. The telegraph operator in Arizona failed to deliver to the engineer one of the orders that he had received for him.

Investigation of every disaster like these shows carelessness by somebody. The thousands of orders for running trains that are accurately transmitted and delivered every day and the hundreds of thousands of signals that are every day seen and heeded prove that the systems and the service of the railroads are good—to a certain point. Beyond that point, it has sometimes been argued, there is a margin of danger that can never be removed. But such a conclusion is not scientific. By the duplication of men who work at danger-points the margin of danger can be greatly lessened if not wholly removed.

Since a frightful ferryboat disaster years ago at New York, which was caused by the sudden illness or the death of the pilot, the ferry companies have been required to keep two men in every pilot house. The principle of the duplication of men or of the repeating of orders at danger-points is evidently still further applicable to the railroad service.

In 1901, 8,455 persons were killed and more than 53,000 were hurt by railroad accidents in the United States; and of these 453 were killed and 3,732 were hurt by collisions. Collisions at least are preventable, whether accidents due to the carelessness of individual men be or not.

A device is now on trial in Germany, which has been successful in the experiments thus far made, that is expected to give warning of danger ahead of a locomotive and to prevent collisions. From a third rail the locomotive engineer receives a warning if another locomotive comes on the same track within a certain distance. The warning is automatically conveyed to both locomotives by the ringing of a bell and by the lighting of a red electric bulb in the cab, and the two engineers may speak to one another by telephone.

TO REFILL THE LAND WITH BIRDS

THE Audubon Societies continue to add State after State to the area of bird safety. They are organizations of bird-lovers who work to educate public opinion to a proper appreciation and protection of bird-life. They have now been organized in thirty States and have 60,000 members. Thus the efforts of a few lovers of birds have developed into a widespread movement of national importance.

At first these societies tried to achieve their end by arousing a sentiment to discourage the wearing of plumage; but this was too big a task. It meant the conversion of every woman in the land to the courageous action of defying fashion.

A more practical campaign was begun—a campaign for State laws to protect birds. Hundreds of thousands of circulars, explaining the economic, educational and esthetic value of birds, were distributed. Circulating libraries and illustrated lectures were sent from town to town. Meetings were held; classes for bird-study were formed. Whenever public opinion in a State seemed ripe, a bill was introduced in the legislature and many a lawmaker was surprised to discover an active interest in birds that he had never suspected. Even the Department of Agriculture at Washington began to inform him of their economic value.

Thus the model bird law of the American Ornithologists' Union, which forbids the killing at any time of non-gamebirds, has been adopted in all the New England States, in New York, New Jersey, Delaware, Florida, Ohio, Kentucky, Indiana, Illinois, Wisconsin, Arkansas and Wyoming. The campaign this legislative season was carried on in Virginia, North Carolina, Tennessee, Missouri, California, Oregon and Washington. No

State will escape, and probably within ten years birds will be protected by law practically throughout the Union.

But even then the labors of the Audubon Societies will by no means end. The laws must be enforced and the public conscience kept alive until sentiment enforces them.

Incidentally, the young people who form these societies add a new pleasure to life by their knowledge of birds and they see a new beauty in nature. They educate themselves while they are educating the community—as all unselfish workers for any great aim.

A CRUSADE AGAINST TUBERCULOSIS

WE may find ourselves engaged presently in a crusade for the practical eradication of consumption; and pray Heaven we may! By a concerted effort street-cars, stations, other public places, and even some streets in some cities, were made and have been kept clean of sputum; and now, with increasing frequency and earnestness, the proper treatment of the disease in its early stages is urged, demanded, begged for. There is talk of municipal hospitals; there are plans for public instruction about the disease; and there are other signs of a general awakening.

Every person who reads must now know that the disease is not contagious; that it is preventable; that many cases are curable—most cases, if treated in time; that it is not inherited; but that it is transmitted by inhaling the tubercle bacillus. Yet in New York City alone one hundred new cases develop every day; and there are 19,000 known to the health officers. Yet there is not a hospital in the city where the cases are treated in their early stages.

It is perhaps the most striking instance that could be found of unutilized definite knowledge that is of vital importance. We know definitely how to save hundreds of thousands of lives; but because it is not a contagious scourge that quickly causes painful death we have been slow to stop the disease. All that is needed is an earnest enough crusade. If physicians and bodies of physicians, boards of health, charity societies, women and organizations of women, philanthropists, the pulpit and the newspapers were all to forget less important things for a time and fall to work, more lives might be saved every year than are lost in the bloodiest wars.

CANADA FORGING AHEAD

CANADA is steadily broadening on the horizon of the world's trade. Within the past six years the Dominion increased her imports and exports ninety-six per cent.. Since 1868 the trade between Canada and this country has undergone remarkable development. In 1868 the Dominion's imports from the United States amounted to \$22,000,000. By 1902 these figures had grown to \$114,000,000, including iron and steel and machinery, \$18,000,000; electrical apparatus, carriages and cotton goods, each about \$1,500,000. From Canada the exports to the United States were in 1868 \$22,000,000; in 1902, \$69,000,000, of which \$16,000,000 came in wood and wood-pulp, together with \$24,000,000 in gold, silver, copper and their ores. During the past thirty-five years Canadian exports to Great Britain have expanded enormously—from \$17,000,000 in 1868 to \$117,000,000 in 1902. Last year the most noteworthy item in this export trade was \$25,000,000 in butter and cheese, largely to be credited to the education of Canadian dairymen by Professor J. W. Robertson and his staff of the Dominion Department of Agriculture.

The extraordinary forward movement in Canada is shown also by the business of the chartered banks, which are on the Scotch model, with a thorough development of branches. At the end of 1902 they had on deposit \$397,000,000, against \$108,000,000 in 1887. The Dominion conducts savings banks at 915 post-offices. In 1869, the second year of its existence, this system showed less than \$1,000,000 on deposit; last year this sum had grown to \$42,000,000.

HELEN KELLER

THE photograph reproduced in this magazine of Miss Helen Keller and of her teacher, Miss Sullivan (Mr. Joseph Jefferson looking on), represents one of the most remarkable results of patient teaching in all human experience. Not only does Miss Keller, who has been blind and deaf almost from infancy, speak English, French and German so that she may be understood by any careful listener, but she understands these languages when they are spoken to her. She understands every word by the impact of the speaker's breath on her fingers. Her attitude when "listening" is shown in the photograph.

Her fingers are gently pressed against Miss Sullivan's lips and Miss Sullivan is speaking.

Miss Keller's intellectual life and attractive character make her a most interesting personality; and her own account of her release from blankness is one of the most remarkable of human experiences.

PORTRAITS OF MR. SARGENT AND JUSTICE DAY

IN addition to the portraits of Miss Keller and Baron von Sternburg, the special German Envoy to the United States, there appear in this magazine portraits of Judge William R. Day, of Ohio, formerly Secretary of State, who has been appointed Associate Justice of the United States Supreme Court, and a portrait of Mr. John S. Sargent, the distinguished American painter, who, during his present visit to the United States, will paint a portrait of President Roosevelt.

TRUST-REGULATING LEGISLATION

THE sum total of the trust-regulating acts passed by Congress falls far short of the general onslaught with which the session began—fortunately; for legislation in restraint of commerce, even when it is directed at definite abuses, is most difficult. New laws either go so far as practically to defeat themselves, as anti-trust legislation in many States has gone, or they fall short of checking the evils aimed at, as the original Sherman law did.

Congress did two things. It created a new Cabinet Department of Commerce which has power to get the facts about interstate corporations, which the President may publish at his discretion. This makes for publicity. How it is going to work nobody knows, and no opinion in advance of experiments is worth much.

The new legislation makes the receiving of rebates or improperly discriminating rates on transportation as criminal as the granting of them. This, it is hoped, will give the Interstate Commerce law a new vitality in the direction of its greatest abuse; and an appropriation was made to enable the Department of Justice to prosecute offenders and to push its cases to final decision with rapidity.

It is doubtful if more could have been hopefully done and if the practical results of what has been done will be great. We must gradually make our way by experiments.

FINANCIAL DESPOTS AND FREEBOOTERS

[THE WORLD'S WORK publishes every month an article in which some timely and vital subject of the financial world is taken up]

SOME time ago Mr. J. P. Morgan, who is the strongest personality in our financial world not only because of his ability but because of the variety of his activity, frankly told the Interstate Commerce Commission that he made a certain large transaction in order to eliminate a speculator whom he considered dangerous to his interests and to stable financial conditions.

This testimony and the state of mind that it showed provoked much comment on the theory of the benevolent despot in finance—on the power that one man may wield. The comment turned not on criticism of Mr. Morgan and his actions or his admissions, but on the larger question of what may be called the proper organization of financial life. Mr. Morgan wields an influence out of all proportion to his own fortune. He is not our richest man. It is commonly supposed that his personal fortune is much less than the fortune of any one of a considerable number of Americans. He brings things to pass not with his own money only, but mainly with other men's money—to a great extent with the money of the whole investing public. It is his activity and his influence and not his fortune that is the main thing.

And Mr. Morgan is of course used only as a type. The large question is: How far have we gone in the organization and conduct of finance? Does the public safety yet rest in the hands of any one man or even of any small group of men? Are we in that stage of development corresponding to the stage in civil development when the king, or at most an oligarchy, had all the power, and the people none?

If we may look forward to a time when our financial life shall have the security that corresponds to the civic security that we now enjoy under representative government, are we not yet a long way from it? Mr. Morgan confessed that he drove one freebooter from

the market. In other words, we had to depend on him to do police work on the financial highway. Is this system civilization or a state of society that may rest only on the strength of an individual?

These reflections are far less definite than the facts that usually fill these pages; but it seems worth while, often than we do, to consider what sort of large structure we are building against possible disaster, or whether we are building any. We are forging ahead, individuals and corporations, each making all possible profit and each fortifying, according to his wisdom, his own structure. But is there enough thought given to the whole public welfare?

The organization of clearing-houses, the use on occasion of clearing-house certificates, and the other forms of coöperation which financial institutions have evolved, are important steps in the constructive organization of financial society. The recent demand in New York City that trust companies shall increase their reserves is another measure of public safety. The safeguards thrown around savings banks, national banks and State banks are old influences for safety. Perhaps nothing more can be done under present conditions. But every once in a while thoughtful men are brought to a sudden halt to consider the power of one strong man. If it be a power for good, might it not become as great a power for evil?

To an extent, yes. A man of gigantic strength always has abnormal power—for good if he use it wisely, for evil if he use it ill. This is true in finance, in politics, and in almost every other field of activity. But it is doubtful if the danger is greater in finance than in any other field.

Return to Mr. Morgan as an example. He has built up his great influence by demonstration after demonstration of his constructive ability and of his safe leadership. If the great enterprises that he undertook had failed

or had been ill carried out, he would not be strong. He is strong because of the power that he has won by successful activity. It is not a power that he can transmit.

The experience of the financial freebooter points the same moral. He goes forth to wreck and he wrecks. But his career is not a long one. He fails to hold the confidence of the public—even of his public. He builds up no permanent influence.

The same law holds even with regard to any financial oligarchy. There is a small group of men in New York who, by combined action, can control a very large part of the great enterprises in the country. They can control a large part of the surplus wealth. But they would soon cease to control them if they misused their power. Their power depends upon their safe use of it. Their own selfish interests depend on using their power conservatively and constructively. This is to say nothing of the sense of responsibility that almost all successful men develop in proportion to their acquisition of authority.

While, then, we doubtless are a long way from the ideal organization of financial life, and are yet in a period of large one-man power and under the influence of strong oligarchies, the devices for safety are more

numerous than they may at first sight appear to be, and the structure of finance is more "civilized" than it seems. It rests—whoever holds the power—to a very considerable degree on public confidence. Public opinion in the financial world does not express itself by ballots, but by silent fluctuations in the market, and by a much more delicate method than it uses in politics.

The sheer accumulation of wealth by an individual or by a group of individuals to abnormal proportions is a much more dangerous thing than the building-up of power and influence by activity in the use of wealth. The greatest dangers in the financial world are not from the active captains, whether they be benevolent despots or freebooters, but from the silent and quiet absorption of "interests" that may be so managed or manipulated as unduly to affect political action or to monopolize trade.

The growth of great concentrated interests necessarily concentrates power. There is no help for that, even if help be desirable; for it is only by the possession of power that men can do great constructive pieces of work. The ideal to bring about is such a state of public opinion as will rigidly hold strong men to a right use of power.

THE CARNEGIE INSTITUTION OF WASHINGTON

WHAT IT IS AND WHAT IT IS NOT

BY

DR. D. C. GILMAN

PRESIDENT OF THE INSTITUTION

A YEAR has now passed since the country was surprised and delighted by the announcement that Mr. Andrew Carnegie, the enlightened promoter of public libraries in this and other countries, had made a munificent gift for the endowment of the Carnegie Institution in Washington.

Although the object of this foundation was clearly set forth in Mr. Carnegie's letter and in the act of incorporation, the methods to be

pursued were left to the trustees. The income could not be appropriated until the trustees came together in November last. Meanwhile, the executive committee engaged in a very careful study of the problem; institutions were visited; leading men in many branches of scientific investigation were consulted; a voluminous correspondence was begun, and the suggestions made in the public press and in private communications were carefully considered. The task of studying this com-

plexity of counsel would have been overwhelming if the committee had not at once proceeded to secure specific and confidential advice from some of the most expert and most eminent of their countrymen. Abstracts of their recommendations were laid before the trustees, at their meeting last November, and that representative and authoritative body reached some important conclusions. In the first place, they decided to wait for further light and for more thorough inquiry, in respect to certain large projects submitted to them. All the greater investigations were postponed. No summary of these propositions has been prepared, but it is safe to say that if the income of the Carnegie Institution were doubled or trebled the learning, the ability and the energy of our countrymen could employ it all in wise undertakings for the advancement of knowledge. The fields are boundless. At present the work of the Carnegie Institution must be restricted to minor projects. Some of these are extremely important and promise to bring forth fruit that will be valuable to the world. But they are, for the most part, so special and technical that any enumeration of them would not be interesting to the public generally for whom this article is written.

The present time appears to be a convenient opportunity to explain what the Carnegie Institution is undertaking to do, and what it cannot do, what it is and what it is not, and, accordingly, I gladly reply to a request of the editors of this review for information on these two points, first, positively; second, negatively.

First, then—What can the Carnegie Institution undertake to do? The answer is obvious if any one will refer to the original limitations of the trust. It can select and mark out certain lines of inquiry, and intrust them to competent investigators, who will report their results to the Institution, to be in some one way or another made known to the world. It can also recognize the ability of certain leaders of investigation, in any part of the country, and give them grants for the continuance of the work upon which they are engaged. These investigators may be found in universities, technical schools, observatories, museums, and in private life. Their number is very large, and all the income could be expended, and then it would be inadequate, if all their requests were granted. Sometimes

a year of freedom, sometimes the appointment of an assistant, sometimes the purchase of instruments will be of the greatest benefit to this class of overworked, underpaid men eager to add their contribution to the stock of human knowledge. The Carnegie Institution can also engage in publication. Such memoirs and papers as are the result of investigations just referred to may be printed, although it is doubtless true that the reports of progress will find a more appropriate place in the special scientific journals already established. There are memoirs, however, so abstruse, so technical, and, perhaps, so long, that they cannot be accepted in any of the ordinary channels of publication. These extended memoirs may be of the highest value to the world if they deal, as they may, with subjects of fundamental significance. Here is an inviting and important field for the Carnegie Institution to occupy.

Another line of activity is closely allied to the foregoing. There are many young men of superior talents in the different parts of this country eager to develop their powers and to make a favorable beginning in their scientific careers. It is not easy to discover who are the most promising, most deserving of aid, most likely to do well. The Carnegie Institution has decided to appoint, for one year, and possibly for longer periods, a certain number of such persons, who will be known as research assistants. They may or may not reside in Washington. No limitations as to age or nationality, or sex, or academic standing are prescribed. Good work already done will have great influence in the selection. A specific purpose, rather than a vague disposition, will be essential. The indorsement, or at least the encouragement, of some one who has already acquired a position in the scientific world will be of value. Sometimes, but not often, promising candidates may be discovered far away from libraries and laboratories (as the late Doctor Keeler, the astronomer, for example, was discovered in Florida). After one, two or three years, it is probable that individuals will be found under the aegis of the Carnegie Institution worthy to be called to important stations, or who will be encouraged, independently, to enter upon scientific careers.

Plans are also under consideration for bringing to Washington from time to time certain persons who desire to become acquainted

with the work of the scientific bureaus of the Government, or who wish to make use (as students, not as casual visitors) of the libraries, archives and collections here maintained. Unexpected difficulties have arisen in respect to the development of these plans, but they are not forgotten.

This brief statement indicates in what the Carnegie Institution has already engaged, namely, the bestowal of grants for research; the encouragement, by specific grant, of a select number of investigators; arrangements for printing scientific memoirs; the appointment of "research assistants," and preliminary inquiries respecting large undertakings to be decided in the future.

There is a reasonable curiosity to know, specifically, what sort of investigations are receiving Carnegie aid. The executive committee does not think it expedient, for many reasons, to publish, at this stage of the developments, this list. It is incomplete; in many cases it is conditional. In some instances the recipients of aid do not wish to reveal their work. But in due time, all the particular appropriations will be communicated to the trustees, and they will doubtless cause them to be published. There is no concealment about the Institution—only that degree of reserve in the preliminaries without which important results cannot be accomplished.

As examples of the aid that the Carnegie Institution has already promised to give, these cases may be mentioned: For the encouragement of biological research a liberal grant has been made to the Marine Biological Laboratory, at Wood's Hole, Massachusetts, an admirable station, frequented every summer by a large number of naturalists. For want of the requisite pecuniary support, the institution has been embarrassed; it will be reinvigorated by this grant. Two tables have been taken in Doctor Dohrn's celebrated laboratory in Naples, and one in a station to be established in the Bermudas.

A grant has been made for the continuation of the *Index Medicus*, the key to current medical science, publication having been suspended for the lack of pecuniary support.

Measures have been initiated for the study

of economic and social problems in the United States, a vast amount of facts having been accumulated in Washington and in the several States of the Union which are now to be examined, digested and studied by competent economists.

The examination of the unprinted archives of the United States will be undertaken, with the coöperation of the officers of the American Historical Association.

Much will be done in astronomy, and among other things, the publication of the memoirs of George W. Hill is soon to be undertaken.

Many minor grants have been devoted to geology, physics, chemistry, psychology, physiology and botany. One of the most interesting botanical inquiries that have been set on foot is that of the vegetation of the arid regions of the United States, an inquiry quite as interesting to the economists and the legislators of this country as it is to men of science.

Second, negatively—From what has been said it is obvious that the Carnegie Institution is not a "university" in the ordinary sense of that word. It has no faculty, it has no body of students brought together in one place. It has no systematic courses of instruction. If lectures should be given under its auspices, they will probably be by specialists and to specialists, not popular lectures nor the sort of expositions required for the instruction of young pupils.

The fund is not intended for the aid of scholars in their antecedent or professional education. This must be provided for by the existing universities and colleges. Only those who are mature enough to show their powers will be aided.

The Carnegie Institution does not propose to build up a library nor to make collections in archeology, ethnology and natural history.

The Carnegie Institution does not intend to do that which other institutions or individuals are doing or will undertake to do.

To sum up the whole matter, the Carnegie Institution is a supplementary agency for the purpose of strengthening scientific workers in any part of the country and aiding them to carry on investigations which promise to be of importance to the world.

GERMAN INTERESTS AND TENDENCIES IN SOUTH AMERICA

BY

FREDERIC AUSTIN OGG

TO many who have been wont to regard the relations between Germany and the United States as fixed for all time by the panegyrist on the occasion of Prince Henry's visit, the current crisis in Venezuela has come as a rude shock. To them it has seemed that the German Government's determined attempt to collect debts due its citizens from South Americans, who bask under the Monroe Doctrine, strikes away the very foundations of friendship between the two peoples. Such a conclusion is, of course, clearly unwarranted. The collection of debts is a perfectly legitimate business for a government, provided it be done after such fashion as common international courtesy demands.

The seriousness of the Venezuelan situation does not arise from the mere fact that Germany, in collaboration with Great Britain and Italy, is coercing an American republic, or even from the open display of force in achieving this end, but rather from the feverish and really quite uncalled for avidity with which the Germans are conducting their side of the affair. There is on their part the same enthusiasm, aggressiveness and proneness to break over the grounds of the justifiable which proved so annoying to other powers during the Spanish-American war and the Peking expedition of 1900. The real gravity of the Venezuelan trouble lies not in the possibilities of an immediate war of the powers, as the alarmists would have us believe, but in the revelation it has made of the German imperial temperament and the possibilities of future German aggressions on South American soil.

When one considers the increasing interests of the German people in certain South American States, notably Brazil and the Argentine Republic, one is apt to regard these latter possibilities as rather probabilities. It is an open secret that in our councils of state there has been of late years a growing

concern at the magnitude of German colonization in the continent to the south of us. The grounds for such concern are twofold. In the first place, German imperial ambition under the régime of Emperor William is universally recognized as becoming more and more insatiable. Twenty years ago Germany had not one acre of land outside of Europe; today she controls by right of full possession 2,500,000 square kilometres, not to speak of probably an equal amount over which her flag does not fly but which is fast being populated and exploited by men of her language and blood. South Africa, China, Asia Minor, Syria, Mesopotamia, and finally South America, are all the scenes of more or less open German aggrandizement; and among them, the last-named, at least since 1896, has been distinctly favored by the Government as a goal for the German emigrant.

The other chief ground for concern at the increase of German population in South America is the fact that of all the peoples who migrate thither in any considerable numbers, the Germans alone hold strictly aloof from the natives and maintain intimate commercial and social relations with the home-land. Spaniards, Italians, Portuguese, even Chinese and Japanese, are quickly assimilated with Brazilians or Argentines, but the Germans never. In the naval debates of 1897 Minister von Marschall declared in the Reichstag, "Emigration must be directed into such channels that the Germans abroad may be kept German." It is in pursuance of this policy that South America has become the favored land of settlement.

German colonies in South America, as elsewhere, are almost uniformly commercial in origin. A colony begins by the settling of some merchant or merchant company in one of the more favored cities, and grows by the attracting thither, through trade opportunities, of friends and business associates, until the business interests of the community pass

completely into German hands. With the merchants as a nucleus the colony is further increased by the coming of agriculturalists, bankers, manufacturers and professional men, though its dominating commercial character is never quite thrown off. The settlers refrain absolutely from participation in local politics. While native factions and parties contend for offices and honors, the German minds strictly his own business, preserves the good-will of all elements, and profits financially by the political preoccupation and industrial backwardness of the natives. In most cases the colonies are quite independent of the Government in whose jurisdiction they happen to be located. They are in the State but not of it. Not infrequently they even go so far as to make their own laws. This cannot but mean the gradual denationalization of great sections of the country. The southern provinces of Brazil have been weakened from this cause. A more patriotic people than the Brazilians would be much exercised over the situation.

The commercial and banking houses maintain the closest possible relations with institutions of their sort in the Fatherland. During the past decade German trade with Central and South America has increased more rapidly than that of any other nation. This fact of itself would be quite harmless were it not that this increase of trade has been brought about almost wholly through German investments and settlements in these countries. It is a trade of Germans with Germans—across 5,000 miles of salt water, it is true—but nevertheless regarded as essentially domestic. Great banking corporations have been created for the express purpose of facilitating this trade. Such are the German Brazilian Bank, with a capital of \$4,000,000, and the German Transatlantic Bank of Buenos Ayres, with a capital of \$5,000,000, not to mention scores of lesser corporations doing business in practically every important South American city. The total amount of German capital supposed to be invested in banks, stores and general real estate in Brazil alone is \$150,000,000.

In addition to interests of this sort there are the railroads, such as the Great Railway

of Venezuela, controlled for the most part by German capitalists. The exploring expeditions now being conducted by Doctor Karl von den Steinens in western Brazil are being followed up as rapidly as possible by the building of the Rio Grande Northwestern Railway—a purely German enterprise. The activity of the Germans in the sending out of scientific expeditions and the construction of pioneer railroads in certain regions of South America reminds one strongly of the devices by which Russia has been accustomed to break the way for political aggrandizement along her Asiatic frontier.

Despite Doctor von Holleben's emphatic assurances a year ago that Germany has absolutely no thought of acquiring territory in the West Indies or along the South American coasts, and despite the repeated disavowals by other German officials of such ambitions on the part of their country, the fact cannot be obscured that precisely such conditions are ripening in portions of South America as the world has come to consider inevitable stepping-stones to annexation. A purely commercial imperialism, such as Bismarck advocated, has long since proved a dream. When the citizens of a great State settle among a weaker and more backward people, with the express intention of maintaining their allegiance to the home-land, experience attests that there are certain to be occasions on which the government of that State will be called upon to defend the interests of those who have passed beyond the pale of its legal jurisdiction. Such defense is the more likely to be extended if the parent state is as devoted to the welfare of its people abroad and as ready to make a display of authority in their behalf as is Germany. There are at present probably not more than 400,000 Germans in South America. But their numbers and interests are increasing so rapidly that it would be folly to close our eyes to the possibilities of the situation. Certainly well to the front among these possibilities is the facing of the United States of the alternatives which Secretary Root some years ago predicted we must choose some day, namely, abandoning the Monroe Doctrine of fighting for it.

THE "PIONEER" COACH IN FRONT OF THE HOLLAND HOUSE
At Fifth Avenue and Thirtieth Street, New York



Photographed by A. R. Dugmore

THE WORKINGS OF A MODERN HOTEL

A STORY OF ORGANIZED LUXURY—MORE SERVANTS THAN GUESTS—THE LANDLORD A SYNDICATE—MORE THAN 1,000 ROOMS FOR 400,000 GUESTS A YEAR AND A \$500,000 ANNUAL PROFIT—A VAST MACHINE OF WELL-REGULATED ACTIVITY

BY

ALBERT BIGELOW PAINE

AMONG all our institutions of progress there is none more amazing than the modern hotel in immensity, in complex activities, in social significance. With a width of 200 feet and a length of nearly 400 feet, and approximately 300 feet in height—these are the dimensions of one of these great machines for convenient living, while within its vast walls are more than a thousand rooms. Its capacity is more than twelve hundred guests per day, and it employs eighteen hundred servants to attend to their needs.

In a sub-basement, forty-two and one-half feet below the street level, is the motive power of this vast machine. Here is one of the largest private electric plants in the world. Its power drives the screws of nineteen elevators and supplies the illuminating energy of twenty-

five thousand electric lights. One hundred and fifty men are employed in these power rooms, though the seven great boilers are self-stoking, and one hundred tons of coal a day are supplied to them in seven automatic and never-ending streams. In the sub-base basement, too, is the private ice-machine, which freezes fifty tons of ice and forty dozen carafes of drinking water daily, besides refrigerating the four thousand pounds of meat, fish and game necessary to feed the huge and gorgeous army of guests and servants above stairs. It requires six skilled butchers to handle this meat item, and five men are employed to open the twelve barrels of oysters that are served daily. These things are bought in open market by men whose sole business it is to buy well at whatever price is necessary to secure the quality desired.



Photographed by A. R. Wright

THE DISTRICT OF MAGNIFICENT HOTELS

Sixtieth Street and Fifth Avenue, at the corner of Central Park. The building on the left is the Hotel Netherland; next to it is the Savoy

The kitchen arrangements of the "modern hotel" are on the first basement floor. I think I had a very dim idea about such things until we went there. I believe I pictured to myself a properly attired *chef* with several assistants before a rather large kitchen range and in a good deal of a hurry during the rush hours, perhaps forgetting his pan of hot rolls in the oven now and then, or letting the eggs get overdone.

My mental picture was not a good one. There is a *chef*, to be sure, but so far as I could see he does not cook. He is simply a captain of the seventy-five other cooks who work in three relays of twenty-five each. There is no range, but a solid bank of broilers—immense gridirons, beneath which are the fires that never die. As for the four hundred loaves of bread and eight thousand rolls required daily, the *chef* does not worry his mind over



Photographed by Falk

THE WALDORF ROOF-GARDEN

the patent cutters and mixers and ovens and staff of bakers needed to supply the simple item of bread; or concern himself with the



Photographed by A. R. Dugmore

A MANMOTH HOTEL STRUCTURE

The Majestic—one of the largest hotels in New York



THE OLD FIFTH AVENUE, THE ALBEMARLE AND THE HOFFMAN HOUSE AT MADISON SQUARE
 The Albemarle and the Hoffman House were respectively erected from 1846 to 1848 and 1848 to 1850, just before the great fire of 1845.

Photographed by A. B. Palmer

quality of the eleven hundred pounds of butter that are each day required to go with it. Neither does he trouble himself with the pastry, where marvelous things are constructed of candies and creams and fruits—works of art, some of them entitled to "honorable mention" in an academy of design. The patrons of the modern hotel are fond of desserts, and the daily item of two hundred and fifty large pies convinces me that a fair percentage of them are native born.

I must not forget the item of eggs. Eighteen thousand are required every twenty-four hours. Boiled eggs do not get overdone; they are boiled by clock-work. A perforated dipper containing the eggs drops down into boiling water. The dipper's clock-work is set to the second, and when that final second has expired the little dipper jumps up out of the water and the eggs are ready for delivery. There are men who do nothing else but fill and watch and empty these dancing dippers, and it seemed to me great fun.

On another part of this floor is the dish-washing, where great galvanized baskets lower the pieces into various solutions of



Photographed by McCormick

RECEIVING A VISITOR'S CARD

potash and clean rinsing water—all so burning hot that the dishes dry instantly without



THE OFFICE OF A MODERN HOTEL

Photographed by McCormick



Photographed by McCormick

A HOTEL BARBER SHOP

wiping. Sixty-five thousand pieces of china-ware are cleansed in a day, and an almost equal quantity of silver. All told, there are three hundred employees in the kitchen departments of this huge living machine.

On another part of the first basement floor is the laundry. Every day is washday in the modern hotel. Eleven great revolving washers are here, four centrifugal dryers, almost exactly like the centrifugal bleachers in a sugar refinery, and six ten-foot mangles

that take in a full-width sheet, smoothing as well as drying it. But the ironing of shirts and collars is done in the good old-fashioned way—by hand, only that the irons are always hot, for they are electric irons, and a perfect evenness of temperature is maintained. They are handled by a staff of sturdy-armed men and women, and an ironer's wages are considered good.

On this floor, too, are the refrigerating rooms, where champagne and other wines are kept at a point just below freezing. Also, the storerooms for an endless quantity of liquors and cigars, and for the \$35,000 worth of groceries kept constantly on hand. Then there are the barber shops, with twenty-seven barbers and bath attendants, and the offices of a big importing company, with the largest wine cellars in America. Going about in this wonderful electric underground world, one would be likely to forget the upstairs, for which it all exists, were it not for the constant stream of waiters hurrying to and fro, placing and gathering up their orders, pausing a moment at the checking office, where sit half a dozen keen-eyed, quick-witted young men.



A HOTEL BILLIARD-ROOM AT A QUIET HOUR

Photographed by McCormick



A HOTEL BALLROOM WITH STAGE SETTINGS

Photographed by Falk

who glance at every dish, see that it conforms to the patron's written order, stamp the prices and the total of each bill so that there can be no possible error, intentional or otherwise, on the part of the waiter.

There are four dining-rooms and two cafés upstairs, and perhaps a thousand people are being served at one time. They are the most brilliantly dressed, best groomed people in the world. They are also the richest. A matter of a dollar more or less on a single item is not considered. Their chief object in life is to live. Their chief object in living is to have as many good things to eat and to wear as possible, and to eat and to wear them in a gay atmosphere of lights and music and flowers and flashing gems.

Besides dining-rooms and cafés on the first floor, there are splendid foyers, or rest rooms, fitted with every luxury in the shape of easy chairs, divans and desks, though perhaps the most striking feature of this mezzanine floor of the modern hotel may be

its wonderful corridors running its length and breadth, luxuriously seated and carpeted throughout, including a gorgeous avenue of Oriental fabrics, lapis lazuli and gold.



Photographed by Falk

A PRIVATE DINING-ROOM IN A HOTEL SUITE



LAUNDRESSES AT WORK

Photographed by McCombs

Then there are the luxurious Turkish smoking-parlor, the ample reading-rooms, and the vast billiard parlors.

The splendid office of the modern hotel

is in the centre of this floor. Here is a force of men, trained for a special service, each with his knowledge and his ability ready for instant use, each with a judgment of men and



A HOTEL LAUNDRY

Photographed by McCombs

The plain clothes are all ironed by machinery

conditions and emergencies that enables him to decide whether a case presented is a matter for instant action or for managerial consideration. At one corner of the office is a young man whose only duty is to supply information and guides to visitors. There are six of these guides, and it is their business to "show through" any stranger who may desire to see the glory and the inner workings of the machine. Guides are also supplied to strangers who wish to be directed about the city, and sometimes to a party of guests on an extended tour.

The office of a hotel was formerly a place where women were rarely seen. Today about that marble and gilded cage the tide of fashion ebbs and flows, and mingles with the stronger current and fiercer swirl of the affairs of men.

Near the office there is a battery of pneumatic tubes connecting with the upper floors. A bell-boy no longer carries up a visitor's card. The card is put into an air-cartridge and is fired straight to the floor where it belongs. An attendant at a little desk there sends it to the proper room. By and by the



Photographed by McCormick

IN THE KITCHEN



Photographed by McCormick

PREPARING THE VEGETABLES IN A HOTEL KITCHEN



Photographed by McCormick

A PLEASANT CORNER IN THE DINING-ROOM

cartridge goes back to the office, and the visitor learns whether the guest he wishes to see is in his room, whether he will see him, and if not, why, or, perhaps, when.

On the next floor above are two rooms for public entertainment: one a complete theatre, 102 feet long, with splendid decorations seated with gold-leaf bent-wood "hand-painted" chairs, of which there are three thousand in the hotel all told—the other a ballroom, 100 feet square, two stories in height, with two tiers of galleries for spectators. The ballroom is used for dramatic performances and for balls and other social events. A card-party had just ended when I went through, and a bushel of playing-cards once used and thrown away, were flung into the corner. Everything is luxurious, lavish and prodigal in the modern hotel.

There are five splendid banquet and reception rooms in all, and they are rarely unoccupied. Lectures, readings, musicales, grand opera performances, art auctions, mighty social affairs that fill corridors and stairways with a dazzling and humming overflow—there is no end to these things. Night is like day, only, if anything, more brilliant. Even the casual visitor feels somehow caught in an endless whirl of gaiety and recalls certain old allegorical pictures wherein the festivities of life were meant to be thrown in high relief.



Photographed by Fish

SALOON, ROYAL SUITE—THE WALDORF-ASTORIA
This suite was occupied by Li Hung Chang while in New York



THE DINING-ROOM OF ONE OF THE LARGE HOTELS

Photographed by McCormick

And everywhere the symbols of luxury—onyx, costly fabrics, gold ornamentation, priceless statuary and art treasure—abound. The clock and chair of Marie Antoinette and the sword of Napoleon the Great are here, and certainly they have never been amid more luxurious surroundings.

It is said that a guest may spend a profitable week in this hotel without once going on the street. Entertainments are always in progress; two orchestras supply music; objects of art and interest are on every hand, businesses of almost every sort are represented on the ground floor, and when at a loss for other amusement the visitor may ascend to the fifteenth floor and sit for his photograph, or spend an hour in a gay roof-garden.

It is not necessary to bring a maid or a valet to the modern hotel. This personal service may be ordered along with a suite, by telegraph; and the guest whose trunks are expressed ahead will find them properly unpacked and arranged in the various closets and drawers. This trained attendant may be retained during the guest's entire stay, to supply information, care for all personal needs,

to secure tickets and berths for departure. Such service to an old, feeble or inexperienced person is of genuine value. Of course, these things are "extra" and cost a round sum, but to those who may be considered legitimate patrons of the great hostelrys—guests who do not hesitate to pay from \$5 to \$50 a day for the apartment alone—the matter of a few extra dollars for added comfort should not count.



IN A HOTEL CAFE

Photographed by McCormick



Photographed by A. R. Dugmore

THE NEW ASTOR HOTEL ON FIFTH AVENUE



Photographed by A. B. Faine

THE HOLLAND HOUSE

One of Fifth Avenue's modern hotels

In the matter of rates, it is possible to obtain small inside rooms without meals as low as \$3.50, prices ranging upward as high as \$150 a day for one suite, or \$250 including a state dining-room. All prices are for apartments only. The old American plan, once so popular, has well-nigh gone out. Guests prefer to take their meals when and where they will. It is doubtful if there are two modern hotels in New York where rates will be quoted for "room and board."

As for the apartments themselves, they are of every sort, size and description. There are Colonial suites, French, Italian and



Photographed by A. B. Faine

THE OLD EVERETT HOUSE ON UNION SQUARE

Greek suites, suites of the far Orient, with all the colors and luxury that wealth can purchase and the looms of the East supply. As the nations have combined to create the American people, so it would seem that they have conspired to produce that marvelous and amazing institution, the American hotel. It is a stupendous affair. The first fat Dutch innkeeper of New Amsterdam, if he were to be placed suddenly in the midst of it all and we were to say to him, "This is what you have brought us to," might find himself at a loss for words. If we were to tell

him that in the year 1902 more than four hundred thousand guests were registered at one of these hotels, and that during the present winter an average of three hundred were daily turned away, he would try to gasp and fail, and if we were to add, as a matter of frivolous detail, that it requires an average of one and a half servants to each patron, if we told him what he must pay for his dinner, and then tried to explain to him that the percentage of profit on each guest is probably no greater than he reckoned from his patrons in his little tile-roofed tavern



Photographed by A. B. Falne

ONE OF THE FINE OLD HOTELS OF LOWER FIFTH AVENUE

The Brevort House

three hundred years ago, he would probably give up trying to think and accept anything further without question. In the matter of profit, one large hotel in New York is said to have yielded \$500,000 net returns in 1902, or considerably less than one dollar on each patron, many of which are not registered, coming in for meals only. This is not a big percentage, all things considered. The sum total is probably less than is distributed by the guests in tips to the employees.

There are a number of hotels the dwellers in which are chiefly families. These hotel



Photographed by A. B. Falne

AN OLD DOWNTOWN HOTEL

Smith & McNell's

dwellers are certain to be always warmed, always lighted, always well cared for by servants, who are controlled as an army is controlled—by efficient officers, strict discipline and exact duties. The servant



Photographed by A. K. Dagmore

A WET DAY ON FIFTY-NINTH STREET, NEW YORK

The Hotel Netherland on the left and the Savoy on the right



Photographed by A. R. Dugmore

A TYPE OF THE OLD-STYLE HOTEL
The Broadway Central

problem is solved for the hotel dweller. So are the various problems that have to do with tradesmen and mechanics. The hotel dweller's problem is to furnish the money—the rest is easy. It is true that there may be



Photographed by A. R. Dugmore

AN OLD LANDMARK
The Astor House

a certain lack of individuality in his home life, and he must put up with rather narrow quarters as compared to what he might have in his own household. He must do without a good many things that he would have in a home of his own, and accustom himself to having strangers above and about him when sometimes he would wish to be removed from it all. But he has many advantages. His meals are always ready. His servants are always at hand. He has a telephone in his room that connects not only with the office, but with the systems of the outer world. He is a living embodiment of human irresponsibilities.

In the matter of architecture the modern hotel is a sky-scraper with peculiar adaptations for its special purpose. A hotel is a perfect plexus of flues, pipes, wires, tubes and sanitary connections. Hotel constructive engineering has become an occupation of its own, as well as hotel architecture, and able men today give their attention wholly to these branches of their professions.

Their problems are many. The architect must be able to construct a vast ceiling like that of the Waldorf-Astoria ballroom, and be able to place on top of it thirteen stories of steel and masonry—a feat said to be unequalled hitherto. He must arrange for proper light, ventilation, economy of space, a minimum of noise, and he must reduce the chances of fire to a degree where, as is claimed by managers today, it is simply impossible for any disaster endangering human life to occur in a modern hotel. As for the engineer, he must see first of all that all connections of wires, flues and drains are safe and sanitary. He must also provide for all vapors and smells likely to arise from the kitchen below-stairs, and see that they are carried to the highest point of the roof, forced up by swift currents through spacious ventilators, until there is hardly a suggestion of an odor even in the kitchen, where cookery on a gigantic scale is always in progress. He must see that the vast system of nerves and draughts and vents and exhausts—startlingly like a human system on a mighty scale—are most unlikely to become disordered and are altogether accessible in case of accident. Like the architect, he has human comfort, safety, life itself in his hands, and it is well that these men should devote a lifetime of energy and study to their work.



Photographed by A. R. Dugmore

MADISON SQUARE, WEST

The junction of Broadway and Fifth Avenue, showing the "Flatiron" building on the left and the Fifth Avenue Hotel on the right. The remarkable contrast between the new sky-scraping building and the older structure is well illustrated



THE CLIFF-LIKE WALDORF-ASTORIA
The largest of the modern hotels

Photographed by A. B. Palmer

But it is not the size, the construction nor the furnishing of the modern hotel that makes it a success. It is the fact that the institution has a system—that the armies are completely and capably officered, and that behind these officers, at a little corner desk, in a quiet, unnoticed nook, sits the commander-in-chief to whom all officers report—the manager of the “modern hotel.”

The manager selects his subordinates, and he holds them accountable. His subordinates select the next in rank, and these in turn select others. Each becomes a piece of a great mechanism, and must be in place and in perfect condition, or must be instantly replaced from the hundreds of eager applicants always on the waiting-list, marked “Next.” Good and promptly paid wages, strict discipline, with accountability to the next higher in rank, with an able manager as the final court—this is the secret of the very existence of the modern hotel.

And now what of the hotels to come? The Astor House and the Fifth Avenue in New York were each in their time thought to be the end of human achievement. Yet the forward movement in

each case has been by leaps and bounds. Only eighteen years ago a writer in the *Century Magazine* suggested the use of the telephone for communication with the hotel office, but even in his wildest flights he did not foresee the present system of a long-distance telephone in every room, making it possible for the occupant to lie in bed and hold a conversation with Chicago.

As to the future, the hotel architects are already planning structures that will surpass any now in existence. On the present sites of the Plaza and the old Brunswick magnificent public palaces are to rise; while it is said that the Pennsylvania Railroad, above an underground station to be located at Thirty-fifth Street, between Seventh and Ninth Avenues, is to erect a house of entertainment in which a building like the Waldorf Astoria could be lost. No conception seems too great. Hotels today are filled as fast as built, crowded, overflowing—rooms must be secured days in advance. Facilities for travel are increasing. Architects will plan, inventors will conceive, capitalists will supply funds for the achievement of whatever the present or the future metropolitan public may regard as the modern American hotel.

THE PRESENT STATUS OF THE PROFESSIONS—PUBLIC-SCHOOL TEACHING

HONEST AND OUTSPOKEN OPINIONS OF PUBLIC-SCHOOL TEACHERS IN ALL PARTS OF THE UNITED STATES—VARYING VIEWS ON THE “RAG-TAG AND BOBTAIL” OF THE LEARNED PROFESSIONS—HOW TEACHING MAY BE ELEVATED

BY

WILLIAM McANDREW

PRINCIPAL OF THE GIRLS' TECHNICAL HIGH SCHOOL, NEW YORK

THIS story I had from a man who was present: A wealthy woman who affects patronage of education drove up one morning to the school of which she is a trustee and invited the teachers to spend the evening at her home. When the refreshments were served that night, one little cake, which by mistake had escaped the vigilance of the overseer, came into the hands of one of the guests and proved to have a curved

omission as if something had been bitten out. The discovery was made in a cozy corner where some of the irreverent young women of the teaching staff were making merry. Annabel, who is a musical accompanist, whispered to the girls that this was the second successive evening she had attended a reception in this house, once as a hired entertainer and once as a guest. She suggested that the things to eat were what were left over by the

"society people" of the night before. At this revelation there were indignant looks, but the teachers' inviolable safeguard, the sense of humor, came to the rescue, and the holder of the telltale wafer lifted it up and proposed, *sotto voce*: "Here's health to us: the rag-tag and bobtail of the learned professions; beloved by children; tolerated by youth; forgotten by maturity; considered municipally, financially and socially as good enough for what is left."

Some have wondered why so old, so necessary and so glorified a thing as learning has failed to reflect upon those who dispense it more of its own respect and honor. Although history does record some cases of praise to teachers, they are comparatively few. The usual record is after this fashion: "Crates of Mallos was the first to teach grammar in Rome. It came in this wise: Having had the misfortune to fall into a sewer, thus breaking his leg, he was thenceforward considered good for nothing but to be a teacher." "Nero caused one Pactus Thrasea to be put to death for no other reason than that he had a sour cast of countenance and looked like a school-master." Horace mentions Orbillius, the most famous teacher of his time, only to confer on him an immortality of contempt. The literature of our own tongue from Shakespeare to Irving, in speaking of us, uses no words so frequently as those of ridicule and contempt. The first American school-masters, say the historians of education, were also gravediggers, street-sweepers, and were employed in other occupations similarly looked down upon.

For me, a teacher, to whine about our neglected state and to entreat for our own sakes a more decent respect, would savor of petulance. This need not be done. The people have done more for the teachers of New York City than has been done for any body of teachers in the world. We are nearer worldly happiness than our brothers and sisters anywhere. My purpose is quite different. I desire rather to present the proposition to you, parents of children, wherever you are, that you are depriving the growing generation of efficient training and are falling short of the excellence you would wish this nation to achieve. You are doing this by failure to hold in higher regard those who teach. This is not a question as to whether they get all they are worth. As more

persons, let them receive what their personality brings them, but as companions and examples for the children of the republic, every soul of us has a deep and inevitable interest in seeing that they are the best and most respected guides and examples that can be obtained.

This question of the quality and position of school-teachers seems to be a pertinent present-day problem. A score of well-known men have, within a few years, contributed suggestions on the elevation of the teacher. This magazine has insisted upon counting actual education as an important field of its province. It has expressed the belief that American teaching is not good enough and that the fault lies in the position of the teacher. Such assertions provoke more or less denial. The protests in some educational magazines led the editor to send specific inquiries to a large number of teachers themselves in every portion of the country, asking directly what they feel their own positions to be. The replies have been turned over to the present writer, now for twenty years past a public-school teacher, with the object of securing from a school-man's standpoint as frank and honest an estimate of ourselves as may be formed from hundreds of opinions. If this were a monograph for educational associations, its presentation, to give it the greatest value to students of the subject, would require printing each reply in full with each respondent's name and position. Here, however, it is required that the case be stated concretely but briefly. Names, moreover, in many cases must be omitted. So timid have teachers become that the majority of those responding have said: "Please do not give our names."

To begin with New England, the traditional starting-place of school-teachers. They say of themselves that they are looked on "sometimes with contempt, often with pity." "The young men fresh from college follow Thomas Reed's example and take a school to keep the pot boiling while they prepare themselves for law or something else." "The young women keep their eyes open for a husband and an easier life." "Conditions are growing rather worse," says a Maine man. "As the power of money increases, the low wages of the teacher puts him at a social disadvantage to overcome which teachers see no adequate compensations in other directions." Maine.

for instance, pays, in cities of more than eight thousand inhabitants, an average of \$448 a year to its teaching and superior officers. The average in the villages and rural districts is so much lower than this that "the service is the subject of persistent and incurable ridicule." New Hampshire says her "teachers are usually commiserated." "The women would prefer marriage, the men the professions of medicine, law and engineering, because in them they would have a professional standing and be taken with more consideration by the bulk of society." The reports from Vermont indicated that "such of the public as know nothing about teaching regard it as an overpaid sinecure, while the more intelligent members of the community look upon it as an uncertain makeshift, to be taken up only by a man moving on to higher things or by a woman watching and waiting for her true estate: a husband, a home, a family." Rhode Island declares that "teaching as an abstract proposition is highly respected," but that the treatment of the teacher herself is another matter. "In many cases she does not respect her own calling. How can she do so in an atmosphere of uncertainty and neglect?" "No Rhode Island woman can be content outside of a home of her own. This deep and fundamental instinct will always make teaching, so far as woman's regard of it is concerned, a secondary interest, and will always make her feel inferior to the majority around her, who have achieved wifehood and motherhood." As to the men teachers of Rhode Island, "they are pinched with small pay and discouraged by the insecurity of tenure. The school-masters of the cities are subjected to a political influence that stunts and paralyzes manliness, while those in the rural communities, as to their acts, their speech and their very souls, are the common property of the rustic demagogue who wields the power of school trustee."

The Connecticut teacher "does not have a social standing because he cannot afford it." "He intends to leave the calling." The woman especially announces that she expects to teach only a short time, because "she would prefer to manage fewer children and those all her own." One says: "The office girl or the typewriter is more of a social success because her evenings are free and her spirit less fatigued; not because she has a mind or a disposition equal to that of a teacher."

Grand old Massachusetts, the school-master's paradise, which produced Mark Hopkins, America's greatest teacher, and Horace Mann, the Moses who drew teachers as far out of bondage as national opposition would let him, sends more replies than any other State. From them it is to be observed that "the ordinary American citizen looks patronizingly upon teachers"; "he gives the impression that he thinks that a man would not be a teacher if he could be anything else;" "the men in schools are not content;" "they are leaving all the time for business, for law, for medicine, for preaching, because these occupations bring more respect, and are freer from absurd and petty exactions in the matter of mechanical uniformity and routine." A superintendent of long and wide experience in the State asserts that "he does not know a single teacher who feels that the money received is adequate payment for the labors rendered." Another reports that "the good teachers could earn twice the money at other work" and that "the poor ones would be dead at half the price," but that "public sentiment will not permit adequate payment nor the separation of charity and political patronage from the selection of teachers."

The Massachusetts superintendents agree that their teachers "cannot hold a high social position because they cannot afford the time, the strength nor the clothes necessary." "In earlier days," says one, "when the masses were not educated, the school-teacher was generally looked up to as a sort of superior being, but of late years the teacher is a sort of valet of the other professions." "The calling has not attained the rank of a profession. It has not even the dignity of a trade. A manufacturer will put in his shops appliances that save labor and improve the output, but the same man on a board of education will vote down, as ridiculous, propositions for telephones, cupboards, locks, letter-files, a typewriter, a card catalogue, a stereopticon, or a time-stamp." "Business men laugh at our unbusinesslike ways; they ridicule the petty bookkeeping we do, but regard as absurd our request for a clerk and a counting machine to prepare the statistical reports first required of us by law, and afterward they make an argument against us as inveterate winders of red tape. We are carrying twentieth-century burdens on a seventeenth-century hand-cart."

A superintendent near Boston gives as a

chief cause of discontent "the uncertainty of reward for labor, devotion, duty, extra study, and superior service." "Pull with a school board counts for more than any special fitness for service." "The best positions are so frequently secured through personal influence instead of merit and experience that the rank and file lose heart and cannot be induced to put into their work one atom of enthusiasm or one stroke of effort more than they are obliged to." "All work done under such circumstances without the vitalizing spirit of hope is inferior work." "If a naturally enthusiastic teacher enters the service, its hopelessness soon causes the loss of this animation and a reduction to the appalling cynicism which is the inevitable disease of most modern school systems."

A superintendent of one of Boston's rich suburbs says: "Teachers have too little social diversion. Their intimates are chosen from their own body; they are too tired or too poor to take a high social position." He is sure that "a teacher's calling is regarded as respectable," but "not sure whether it is above or below that of the girl who has an office position." The marriage problem confronts every school superintendent; every respondent admits that a woman teacher ought to wish to marry, and that with a corps composed chiefly of women educational perfection must be a secondary consideration. The superintendent's problem is, therefore, how to get the best kind of second-class service rendered for the money allowed for it. All agree that the men teachers, likewise, do not regard their work as first-class. Says one: "Almost any other calling is preferable for a man." Says another: "No ambitious father or mother wants a member of the family to be a teacher." A third remarks: "Every school man I know, but one, came into the ranks by accident or intending to remain a short while."

Turning to the next group of commonwealths one finds the teachers of New York State ready to answer all the questions and to be quoted as responsible for the statements. Mr. Charles R. Skinner, the State Superintendent of Public Instruction, and Doctor William H. Maxwell, the Superintendent of Schools of New York City, express themselves as believing that one of the fundamental reforms of education has to do with the social and financial condition of the teacher. Both

men take open and decided positions advocating the elimination of politics from the selection of teachers, the assurance of the tenure during meritorious service, and the payment of high wages for high attainments. The State Teachers' Association has a permanent committee on "the condition of the teacher." It is undertaking an elaborate and detailed account of stock in the different counties of the State with the intent to suggest the most practicable and effective steps for the improvement of the service. From the very large number of replies received it appears that the life of a teacher in this State is estimated by himself more hopefully than in any other in the Union.

One correspondent maintains that there are more school systems in the State free from political meddling than is usual in America. Another calls attention to the average salaries for the teachers of the cities of the State—\$863 a year as against \$728 in Massachusetts cities and \$528 in the cities of Pennsylvania. In the matter of social position, the same general statement is made as by the New England educators. Superintendent Gilbert, of Rochester, says the attitude toward the rank and file of teachers is determined wholly by the ranks from which teachers come and from their natural association. A teacher whose mother is a scrub-woman is naturally regarded by her family as socially superior. There are many such in the common schools. Persons of a so-called higher rank frequently regard teachers as they do all women-workers—as inferior. Superintendent Walker, of Elmira, thinks the public does not know and therefore does not appreciate a teacher's work. Superintendent Tisdale, of Watertown, "believes the teacher never ranked as high as today, and that the people are awakening to the danger of retaining poor teachers." "As soon as public sentiment condemns poor teaching good teachers can have anything that any public service can command."

New Jersey has been in a condition of mild educational ferment for three or four years. Proximity to New York City during its school reform raised salaries to a considerable extent. All of the leading school-men, including the State Superintendent, are busy with plans for an improvement of the service. The average monthly salary of men teachers in New Jersey is \$87 and of women \$22

The view of a superintendent who has had experience in four States is that "Most women and all men under thirty are discontented in teaching. After that age they become more or less reconciled, but this seems a sorry state of things for an occupation requiring spirit, joy and enthusiasm. The women, of course, would prefer even a humdrum life if it were a married one, but the discontent of the men is due almost wholly to lack of means. Pick out the men who are teachers, not supervisors, and they have no rank at all—they are a caste. The highest school official feels that his calling ranks the lowest of all the professions; for a man doing work as a class teacher the public has not even contempt. He is a cipher with the rim removed. We superintendents are furnished with a few celibates, a crowd of half-baked girls, and an equal number of disappointed old maids with which to educate the growing generations. Then some parent, too busy to think, wonders why his boy doesn't like school. The American educational system today seems to me one of the most ridiculously managed fool things on earth. There is nothing funnier than the solemn way in which we sit and speculate about it, when everybody knows the trouble."

From Pennsylvania come many answers. State Superintendent Nathan C. Schaeffer leads. "To ask what callings rank more dignified is to my mind an improper question. If the King of Heaven should send two angels on earth, one to break stones upon a highway, the other to rule a realm, which one, knowing himself doing his Lord's work, would dare exalt himself above the other?" Another Pennsylvanian, desiring not to be quoted, cries: "If we count the estimate of the world, teaching is not worth considering; if we prize the approval of the judge within the breast, no service can compare with mine. It is my daily consolation that the Great Teacher was despised and rejected of men much more than I." Most of the Pennsylvania teachers allude to the low wages of teachers in that State; they average \$352 a year for men and \$304 for women.

From the South the reports exemplify a general tone of resolution to improve the educational service of the district, no matter how the public treats the teacher or what his financial position may be. Says one superintendent: "We are not in this occupation

for money; there is a big work here that must be done and we must do it just as long as we can stand." Says another: "The teachers of the South are more generally religious than in any other district; the consolations of religion are the only things that can uphold a teacher in the sacrifices that must be made." "Our teachers suffer from the public's disposition to rate them from a monetary point of view."

From the interior States come the announcements that longer and more expensive preparation is everywhere demanded of those who would be teachers. In some localities this is resulting in a failure to get enough teachers to fill the schools. "It is the general opinion among all the school men I know," writes an Ohio superintendent, "that had they given as much attention to any other calling they would have been better off." "Young men of talent do not care to teach: there is not enough independence, surety of engagement, or pay in it." "Indians are said to 'regard teaching as a hard way to earn a living, though honorable.'" "The men are especially discontented." "It is impossible for teachers to live up to professional or educational ideals on present salaries." "The best men are drawn off to larger liberty and manliness in other professions." Superintendent W. A. Miller, of Crawfordsville, says: "The most serious threat to the progress of education in America is the fact that the ability required for successful school administration today is wanted more in business than in schools—that is, business offers three or four times the school price."

Michigan is a low-salary State. State Superintendent Henry R. Pattengill tersely puts it: "Teaching—noble in all but the wages." Says Superintendent Stewart, of Bay City: "Teachers are becoming better educated, but in America money talks." "Low salaries and chronic political meddling are the curse of Michigan schools," says a Normal school professor. "Our city is notoriously indifferent to the treatment of the teachers," writes a Detroit schoolmaster. "Private schools flourish and offer a harbor to teachers driven from the public system by nagging politicians."

George Herbert Locke, Professor of Education in the University of Chicago, and editor of the *School Review*, declares: "Conditions are growing better here; people are awakening

to the fact that the teacher ought to be a force in the community, a force for righteousness in public and civic affairs." This is the city in which the woman teachers have been at law for their salaries for the past five or six years. From rural Illinois and from all through the central West come such answers as this: "We have no cause to complain of our social positions." "There is less snobishness in the treatment of teachers here than in the East." "Low salaries and uncertain tenure of engagement prevent retention of the best teachers." "Teachers are not looked down upon. Everybody is willing to help them get some better employment."

"In small towns," says Professor M. V. Q'Shea, of the University of Wisconsin, an authority on educational conditions, "the teacher is a model of intellectual excellence. In larger places they are considered hirelings who lack the polish, the spirit and the raiment which 'good society' demands." "Dakota teachers," says a correspondent, "are regarded with mingled pity and respect. They are birds of passage, turned out at the end of the year. They cannot afford the expense necessary to live well. Independence is impossible. As they cannot return hospitality, they do not get much of it."

The teachers of the far West are not expected to teach more than a year or two, and so are regarded just the same as anybody else. The Arizona teacher "is the oracle of the place and expected to know a little of everything." "In this State you can get admitted to the bar or to the ministry easier than you can get a teacher's license." "Montana school-teachers are mostly Eastern girls; they marry faster than the superintendent can get a fresh supply. The educational authorities desire a law to prevent marriage of school-teachers except at the end of June." "Everybody of any consequence in Idaho taught school once and so are good to those who are temporarily engaged in it now." On the Coast, President Benjamin Ide Wheeler thinks the men would mostly prefer law, medicine, commerce, theology, railway management, engineering, etc. President David Starr Jordan thinks "the teacher makes whatever social place he deserves." Other replies from the Pacific States agree in the main that teachers are expected to leave the occupation in three or

four years, having in that time prepared themselves for an occupation more suited to the ability and ambitions of a live man.

These, then, are the opinions of teachers and superintendents as to the positions we maintain for them. Again I urge that their personal comfort and satisfaction are no more to us than that of any other laborers. If they are discontented, and can do better otherwise, let them go out and make place for those who are willing to be treated "with mingled pity and contempt." But from the point of view, if not of patriotic citizens desiring the advancement of the country, then of selfish parents wanting the best for our children, we must do something to make it worth while for bright men to stay in the ranks. We must leaven the teaching mass with some superior talent which can be held to work long enough to perfect an art which is now chiefly short-time guesswork in the hands of "birds of passage." Scarcely a daily paper is printed without the obituary notice of some distinguished man, like Abram S. Hewitt, who "taught school for a few years" in this or that town. What drove or drew them out of teaching? What would not American teaching be today if the traits and powers which made those men successful could have been held to its service and given freedom and encouragement to advance? Among our five hundred thousand and more American teachers, why is it that we do not have a greater number who have discovered an eminently successful career, not in management, but in the actual work of instruction? It can be seen that the operations which give fame to a Doctor Lorenz are simpler than the functions of perfect teaching; but we have no one who remotely suggests a Doctor Lorenz. Knowing American sentiment as we do, we cannot expect to attract or hold the best talent in our ranks at \$47 and \$39 a month, the average salary of men and women teachers respectively in the United States.

The well-to-do trustee whom last I heard discuss this question said: "We cannot expect teachers to enjoy the material benefits of this life. They must, in the spirit of the missionary, as martyrs maybe, give their life to the service." That means celibacy, that means asceticism; that means a perfection of unnaturalness which, however inwardly glorious, does not radiate the sort of atmosphere I want my children to bask in.

I want them taught by red-blooded, virile men, and by pleasant, rosy, buxom women; the sort of people I myself would be glad to meet and talk with long and often. So do you. This missionary spirit may be well enough for a few devoted souls in China, but our nation, the richest in the world, is a loser if it persists in making a business of preaching missionary spirit to its hired men and women in the schoolroom.

Nor will the government let me demonstrate by a model school that high wages will draw better talent into teaching and keep it in better condition. Government has a monopoly of schools. I could not compete with it. The only circumstances in which private schools can succeed are when the public schools are so bad that intelligent people are unwilling to patronize them, or when there is a sufficiently large number of persons desiring fashionable exclusiveness to support a private school because it is exclusive. American sentiment combats both reasons and tends to keep the public schools just good enough to prevent any considerable number of school-teachers setting up their own institutions and winning real respect and standing by superior triumphs springing directly from their own ability and skill. The only possible way this triumph can be won is by a superior teacher who has an independent fortune sufficiently large to enable him to own his plant, to take pupils free, to compete on their own ground with the public schools and to demonstrate on the spot the conditions under which teachers can do the best work. It is not sufficient to say that endowed schools are doing this, for the wages of their teachers, the slavery of their routine, the insecurity of tenure of their employees and the general lack of inside and outside inspiration are not strikingly in advance of the public institutions. Trustee or family politics seem fully as baneful as the politics of the ward or county. The ultimate destination of their endowments, even in this age of marvelous gifts to "Education," is not in teaching at all. The average donor has not passed beyond the stage of wanting to see his money materialize in buildings, books, or something that he can go to see and feel.

Teaching is today suffering not so much from lack of buildings and apparatus, to which most of this money goes, as from a

dearth of red blood, manly strength and ambitious hearts.

Yet Lewis Elkin, of Philadelphia, has just left his fortune, not for buildings, but to pension worn-out teachers. Next we shall see some man (or more likely some woman) of wealth awakening to the unique sanity of recognizing that the actual teacher, and not the building or the supervising officer, is the seat of educational progress. We shall see some one bestowing moral and financial encouragement on actual education itself, not upon the place where it might be given.

Meantime, and all the time, there is a spirit underneath the whole of American education—notwithstanding the answers which the teachers, in respect for the truth, had to make to the editor's direct questions—a spirit in some places heroically strong, which is pushing the work of teaching upward in spite of all the circumstances which would seem to make it impossible; it crops out in some part of every reply received; it declares that, however the public regard it, this work is intrinsically and inevitably the most dignified and important that any man or woman can engage in. It is a spirit that leads some men and women to remain at work, not only admitting that they are in the rag-tag and bobtail of the professions, but in fact *because* they are in the rag-tag and bobtail—because that is where there is at this moment the greatest need for them. If teaching is moving one little barleycorn toward the front, it is because of the work of such as these, looking beyond the common regard of communities to the real satisfaction, the authentic, legitimate, incorruptible content of rendering a service inferior to none. That it does not move forward faster seems to be due to the community. Wherever a teacher is ashamed to be known as such, you will find that what passes for the best society of the place is chiefly to blame. This fact suggests the unique opportunity for such citizens of wealth or position as are looking for chances of real service. Pick out one public school. Add a little to the monthly pay of every one within it; but above all go to the teachers and tell them you for one respect them for their work. It is only by realizing that their devotion to a profession that requires self-sacrifice is recognized for what it is, that the teachers can labor single-heartedly in these days of insufficient recompense.

COMMERCIAL WIRELESS TELEGRAPHY

MARCONI'S DEMONSTRATION OF THE POSSIBILITY OF TRANS-OCEANIC TELEGRAPHY AT FROM FIVE CENTS TO TEN CENTS A WORD—STATIONS TO COST ONLY ABOUT \$200,000—IN THE CAPE COD STATION WHEN MESSAGES ARE SENT TO ENGLAND

BY

LAWRENCE PERRY

WIRELESS telegraphy is a commercial fact. When Marconi, after months of final preparation, sent, on January 19th, President Roosevelt's message to King Edward from Cape Cod to Poldhu, the last doubt vanished. While I was at South Wellfleet on Cape Cod—where I went to meet the inventor and to get a view of his work—he said that in six months his invention would be on a business footing. It was the cautious remark of a man who was assured of his success. The experimental stage of wireless telegraphy is passed.

Imagination can hardly picture a drearier place than the Marconi station at South Wellfleet. Surrounded by a stockade, guarded night and day, the four towers rise two hundred and ten feet above the gray sand dunes, while beneath squat a few low buildings constituting the plant. Here I found Marconi the day after his successful test. In appearance he suggests the Englishman rather than the Italian—his mother was Irish and he studied at an English school. His tastes are all English. He has a short, quick, determined way of talking.

Visitors are not allowed to see his inventions in operation. When I asked to see him send and receive a message he hesitated. But he decided quickly.

"Come on," he said.

Walking along the board-walk under the great towers, it was noticed that from the horizontal stay-wire running between the two northerly towers were strung a number of telegraph wires, about half-way down converging like those of a gigantic harp.

"These wires receive and send out the ether waves," said Marconi. "There are fifty of them there, which, I have found, send and transmit the waves with sufficient power to carry to England. I used to think that

you needed great heights; now I find that the more wires you have the less height you need. These fifty wires are joined to the wire running into the operating room. But come in here."

He opened the door, and the visitors entered a room where few have been. The centre of this place was filled with great box-like Leyden jars; while at the easterly side was the magnetic-detector which has replaced the coherer in receiving messages; on the south side was the induction coil and great zinc and copper tanks of oil. Over the Leyden jars, which occupied the greater portion of the room, were four huge sheets of zinc bound with copper. On the concrete floor were rubber mats, and the walls and low ceiling were of hardwood. Here some important devices were completed late in January and some important discoveries made. Queer instruments stored in all parts of the room evidently played their part in the general scheme, but no one but Marconi knew what they were or what they were for. On a northerly wall over a platform were tables with a brass sending-key and a great wooden lever also used for sending. Marconi stood on this platform, his hand resting near the sender.

"Now," he said, "when I signal to the electrician fifty thousand volts will come into the room. Stand up here by me and don't touch *anything*. Keep away from those jars, because the current does not wait for you to touch it. It will jump to you."

I confess I stood as close to Marconi on the little platform as I could. A volt measures speed; an ampere means volume—Marconi has secured great speed with little volume; so that, if anything slipped and the fifty thousand volts passed through you, you would get about the same shock as though



Photographed by L. Perry

MARCONI AND HIS ASSOCIATES LEAVING THE WIRELESS TELEGRAPH STATION
AT SOUTH WELFLEET, MASSACHUSETTS

you had formed a ground connection with a trolley wire, which measures about five hundred volts, but has fearful amperage. This scene is indelibly stamped in my memory: the room, packed with its queer, mysterious instruments, of some of which the electrical world knows nothing, and that slight, youthful figure of Marconi, with his eyes fixed on the indicator, his sensitive hands on the key. You thought of what this man of twenty-nine had accomplished—of his long fight, his courage; and here you saw him, in the midst of that accomplishment, ready to reveal it to his wondering companions.

"All ready!" he cried to the electrician who stood in the power-room watching the inventor through the long connecting hallway. A lever was pulled and a dim hum filled the room. The indicator of the volt meter began to race past all sorts of high figures on the face of the dial.

"Now I'll send to Poldhu." He pressed the key.

There was a blinding flash of bluish light, for with each movement of the key great sparks jumped two inches between the two silvered knobs of the induction coil. One knob of this coil is connected with the earth, forming the ground connection, the other with the wire leading to the aerial wires. Each spark means an oscillating impulse from the battery to the aerial wire, and from the wire the oscillations of ether occur which carry through space at the speed of 187,000 miles a second. With the blinding flash accompanying each movement of the key occurs a report to be compared accurately with the noise attending the discharge of a Krag-Jorgenson rifle. It was terrifying—the light, the noise, and in the midst of it all the inventor calmly pressing the key, making more noise, more light. Imagine a company of



MARCONI READING A MESSAGE

Photographed by Frederick Collins

infantry firing at will in a tunnel and you can understand the sound that accompanies sending a message. Marconi, who stuffs cotton in his ears when sending, is now experimenting to deaden this sound. But somehow, to one impressed by the fact that here, in this very room, a message was being sent through the air across that gloomy stretch of 3,000 miles of ocean, the noise and the light seemed fitting—gave the proper touch of the superhuman, of force, of intensity.

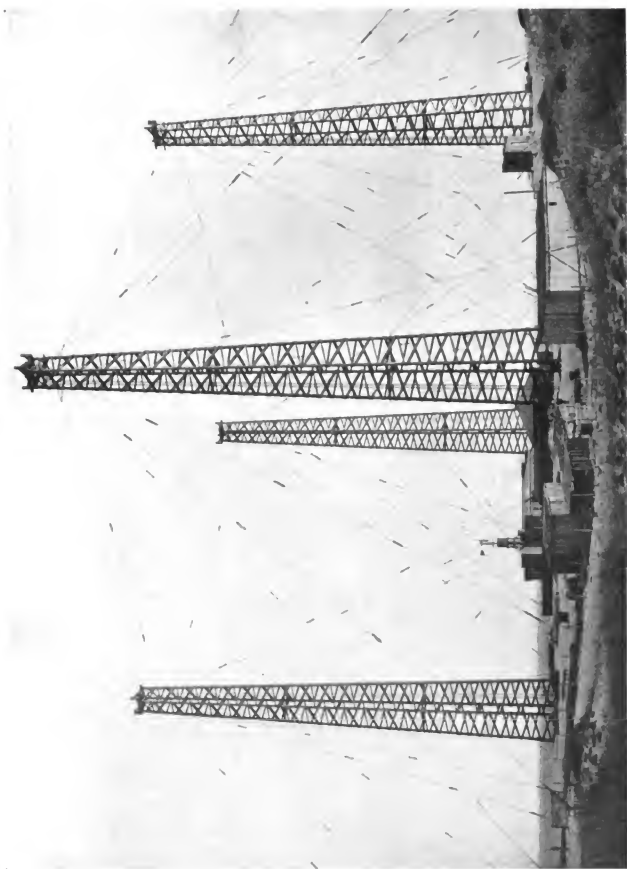
Quite different was the process of receiving. When the light and the banging ceased there was a strange silence as Marconi walked over to the receiving instrument. He set in motion the wheels of the magnetic-detector. No sound came at first, and while waiting Marconi pointed to the detector. The incoming oscillations from Cape Breton, he said, would be caught there. He pointed to a wire passing around the outside of the two wheels of the detector. This wire is of soft iron, insulated, through which a slight alternating current passes. The ether waves disturb this current sufficiently to cause either a dot or a dash, as the case may be, and this is recorded on a ticker. It was a strange experience. Suddenly the detector began to move and the ticker to click. Every one started forward. Slowly the tape ran out of the ticker—dot, dot, dash—so they came; and by placing

a telephone receiver to your ear you could hear plainly the b-r-r-rang of the induction coil hundreds of miles away. While the phenomenon was taking place it was difficult to tell whether the faint sound one heard was the impulse, coming hundreds of miles through the air, or one's own heart beating. It is impossible to analyze your impressions in that place.

"Of course unforeseen things may occur, but I think now we shall be on a business footing inside of six months," said Marconi afterward. "Overland or across sea, it makes no difference; you know we have sent messages overland from Cornwall to St. Petersburg, 1,500 miles. The waves will go through anything. For instance, we have Nova Scotia and Newfoundland between this station and Poldhu, but the ether waves travel all right. Wireless telegraphy is assured."

If any person can invent a name for wireless messages, he will have the thanks of Marconi. He calls them etherographs, for want of a better term.

Marconi is not the discoverer of the ether waves; neither did he evolve the theory of wireless communication, which he has brought to such a practical realization. He acknowledges adequately the work of predecessors in leading up to his invention: Professor S. F. B. Morse, Doctor Oliver Lodge, Sir



THE WIRELESS TELEGRAPH STATION AT SOUTH WELFLEET, MASSACHUSETTS

Showing the simplicity of the apparatus



MARCONI

Photographed by Falk

William Preece, Sir William Crookes, Edison, Tesla, who perhaps came nearer than any to working out a system of wireless communication; Hertz, the discoverer of Hertzian waves, and Professors Trowbridge and Dolbears, of America. He used the coherer invented by

Branley and Calzecchi. Although when criticized on this point he abandoned that important instrument for receiving messages, and produced his magnetic-detector; he utilized Professor Rhigi's oscillators and the discoveries of Henry and Hertz. But all these were simply parts; wireless telegraphy in its entirety, its successful application, its brilliant originality, is absolutely his.

The idea of it, so Marconi has stated, came in 1894, while reading in an electric journal an account of the work of Professor Hertz with ether waves. He was interested in the Hertzian theory that waves of ether could be carried through space; but feeling that great numbers of scientists must be pursuing the phenomenon, Marconi did nothing for a year. Then hearing nothing from the world of science, he began to investigate for himself. For detecting the waves sent from his oscillator Hertz used a metal hoop broken by a small gap. When the hoop was brought within the influence of the transmitting instrument it was noticed that a small spark leaped across the gap in the hoop. This showed that the waves when radiated into space could be detected at a distance by this metal hoop. The thought came to Marconi that if he could interrupt the waves en route, so to speak, from the oscillator, breaking



THE GRAY ATLANTIC OVER WHICH THE MESSAGES PASS

A photograph taken from a Marconi tower

them up into long and short periods, similar interruptions would be detected in the spark of the metal hoop. A short emission of the transmitted waves would signify the dot of the Morse code; a long emission, the dash; and these would be registered in the distant receiver. Later Marconi conferred with Professor Rhigi, and in 1894 Doctor Oliver Lodge issued a book publishing the result of his experiments with the ether waves, suggesting a number of possibilities, but neglecting that of telegraphy altogether. Marconi utilized all available material, but it is only fair to say that new elements of his own invention made long-distance wireless communication a success.

Briefly, the Marconi system of telegraphy consists of setting in motion, by means of his transmitter, electric waves, which pass through the ether (a colorless, rarefied, unknown agent, supposed to fill all space) and are received on a wire or wires strung in the air. Like water, ether has waves, which may be set in motion just as waves from a stone thrown in a pond—it is the same principle exactly. Air waves and ether waves are totally different; sound is the result of the vibration of air; light the result of vibration of ether. Air waves travel infinitely more slowly than ether waves; that is the reason you see the lightning flash before you hear the thunder. Electricity means etheric vibration. Wireless telegraphy simply means the unharnessing of electricity which has long been transmitted only by wire. Marconi has demonstrated that since ether is everywhere the waves can be set in motion and sent on long journeys without the medium of wires as well as with them. But after these deductions he had first to invent two mechanical processes—one for setting the ether waves in motion so that they would travel great distances, and the other for receiving and registering these waves. Finally he evolved an apparatus which, when a current from a battery passed through it, would cause the current to jump between two brass or silver balls, described in the foregoing, and, passing thus into the aerial wire, would be radiated into space. By turning this current on and off with an ordinary sending-key its waves would be divided into dots and dashes. To catch these waves an aerial wire was hung up many miles away. The waves which the wire catches are too weak to operate an ordinary telegraph

instrument. In order that they might be strengthened Marconi utilized the coherer of Calzecchi and Branley. The coherer was a little glass tube two inches long, plugged at each end with silver plugs. The ends of these plugs very nearly met in the middle of the tube. Within the narrow space in the tube were little atoms of nickel and silver. The incoming ether waves, though not strong enough to work a telegraph sounder, are strong enough to cause the loose silver and nickel particles to cohere. When the particles are loose they will not carry an electric current; when they cohere they are good conductors of electricity. Thus when they cohere, a current from a powerful battery runs through the tube, and operating the Morse instrument, causes the ether wave which entered the coherer in the first place to be registered as a dot or dash, as the case may be. As soon as this has been recorded, a little tapper causes the particles to fall loose, as it were, and thus it is ready for the next wave. Marconi has abandoned this coherer now, however. Instead, he uses the magnetic-detector.

Around two wooden wheels half a foot in circumference runs a wire consisting of soft iron, insulated, through which a slight alternating current passes. The magnet causes the current to alternate, which means flowing first one way around the wheels, then the other way. The ether waves disturb the regular flow of this current, and additional current, pouring in at the moment of the disturbing waves so that it operates the Morse instrument.

In his first experiment Marconi believed that the ether waves could be sent great distances only from great heights; so he used kites to carry his receiving and sending wires, believing that the curve of the earth hindered the progress of the waves. Recent experiments have shown, however, that the waves conform to the earth's curve, and that the aerial wires need not be very high provided sufficient power be utilized in transmission. The sending of great power caused the instruments to become overheated, and this was one of the problems solved recently at Cape Cod. From the appearance of the operating room it looks as though oil were the chief medium in keeping the instruments cool while fifty thousand volts were being

shot into aerial wire; but that, of course, is only conjecture.

Marconi first began to experiment with his invention in his father's fields in Bologna. Later he came to London, working in the laboratory of Sir William Preece. Then came signals overland on Salisbury Plain, through walls and houses and everything else; and finally, in 1897, came the great success of sending a message from the Needles on the English Coast to the Isle of Wight. In July, 1898, came its practical test and its complete success, by the Dublin *Daily Express*, in reporting the Kingstown yachting regatta. Since then Marconi has persevered and fought under all sorts of discouragements and doubts until wireless telegraphy is about to become something that will be quietly accepted, just as the telephone and telegraph were, each in its turn.

The extent of its commercial success is already remarkable. In England there is the Marconi Wireless Telegraph Company, capitalized at \$5,000,000. In this country the Marconi Wireless Telegraph Company of America is capitalized at \$6,500,000; and the Marconi Wireless Telegraph Company of Canada has just been organized. The Italian Government deals personally with Marconi, and he is now preparing to establish wireless connections between Italy and Argentina, a distance of some six thousand miles. With the United States the American Company is putting through its system from Seattle to Juneau, Alaska; and in other ways this government is experimenting with different systems of wireless telegraphy. Germany is taking up the Arco-Slaby system, which has not yet been brought to the perfection of the Marconi invention. France is experimenting with various plans, and so is Russia. About seventy British cruisers and a number of English lightships have the Marconi system installed, and the great ocean liners find it almost a necessity. Off our coast the Nantucket lightship supplies information of incoming vessels hours before they would otherwise be reported. The United Fruit Company, controlling the tropical fruit trade of the Gulf of Mexico, has contracted with Marconi for the establishment of stations at its Central and South American ports. Every ship of the company will be fitted with the Marconi apparatus and will carry an operator. Other private concerns in all parts of the

globe are taking an active interest in the development of wireless telegraphy. The public believed in the invention before its success was assured. Marconi thoroughly believes that it will supersede to a great extent the telegraph and the cable. The wireless system will secure almost a monopoly in the sending of matter that cannot be codified, as, for instance, stock reports and press matter. Marconi says that written-out matters can be sent in full across the ocean at ten cents a word for commercial matter and five cents a word for press matter, the rates now established at Glace Bay; and that he is prepared to meet any reductions his competitors may make. He promises a reduction anyway when improved facilities and the volume of business warrant it. Indeed, Marconi prophesies that in time the rates will be so lowered as to render it no more costly to send a message from New York to London than it costs now to telegraph from New York to Philadelphia. It costs only \$200,000 to install a transatlantic wireless telegraph system, and once installed there is nothing to get out of order; no breakages to repair, except, probably, a wire or so once in a while. The repairs for one year to a perfected wireless telegraph system should not equal the cost of keeping a cable repair steamship in commission for two months.

The scheme of tuning a sending instrument so that it will send ether waves vibrating a specific number of times a second, and be received only by a receiving instrument tuned to receive just that number of vibrations, is one of the greatest of the Marconi achievements. It had been maintained that a rival to the concern using the wireless system could simply rig up the aerial wire and catch the ether message also. The waves radiate in all directions, all efforts to send them in one direction only like a searchlight having failed where great distance is involved. This, too, was the fear expressed in regard to the war-ships of nations at war. But now the system of tuning has obviated all this. Every firm or country may have their instruments tuned to send and receive only a certain number of vibrations by the ether waves.

Marconi says that there is no limit to the distance of wireless communication. It is only a question of increasing the power of the apparatus. He counts on sending messages

across the Pacific Ocean from San Francisco to Japan in due time. England still refuses to allow Marconi to transmit messages overland, and until that is done public business by wireless telegraphy will be delayed.

Within a short time stations will be erected at Seattle and San Francisco to open communication between these ports and vessels at sea. The State of Washington and Alaska are now being connected; and in a short time the whole of the Pacific Coast will be lined with stations for communication with shipping. On the Atlantic the Marconi Company already has three such stations, all in active operation—one at Sagaponack, on the end of Long Island; another at Babylon, Long Island, and one at the Nantucket lightship. They are working perfectly and a large amount of business is already being transacted. A school of wireless telegraphy has been established in Babylon where telegraph operators are instructed in the use of the delicate instruments. It is only the best operators who can become successful in sending and receiving; the finest sense of hearing is requisite. There are from four to six students in the school all the time, and they learn the system in about three weeks. They receive free lodging at the quarters of the company, and when they have finished the course of instruction they are employed at a salary of from \$60 to \$100 a month.

With the short-distance stations on the Atlantic and Pacific coasts, the transatlantic stations in Canada, England and this country and the future trans-Pacific wireless system, there will be communication with all parts of the world. A station is soon to be erected in South Africa; and at Monte Mario, Italy, the most powerful station in the world will shortly be built, at which place Marconi will work out the remaining problems of wireless telegraphy. Among other things at Cape Cod he solved the minimum power necessary to carry the ether waves across the Atlantic.

There seems no limit to the pictures that one's imagination sees in the future. Every newspaper office in the land might be equipped with wireless receivers. Every home could have one. A message received of an event anywhere could be "marconied" simultaneously to every newspaper in the land, and household subscribers could receive their news

on ticker tapes. Marconi has already thought of this project. When Marconi's work is completed France can talk to Russia without paying any other government, and England can communicate with Italy direct without the aid of branch systems. It means much to international politics. Marconi says it is just as easy to communicate by wireless telegraphy over land for any distance as it is across the water. He did not believe this at first, but now he finds that it is so.

The equipping of ocean greyhounds with the Marconi system has taken away part of the dread and mystery of the sea. Steamships can now communicate with one another or with the shore at a distance of hundreds of miles, the case of the American liner *Philadelphia*, which talked with Poldhu from mid-ocean, 1,551 miles, on February 22, 1902, coming to mind. Recently the *Philadelphia* and the *Lucania* played a chess game en route, and a plan of supplying liners with daily news from shore at \$5.00 a day is now being contemplated. In April, 1899, the Goodwin Sands lightship off the English coast was struck in a collision, and with her Marconi apparatus was able to send for assistance across twelve miles of ocean. Life-saving stations along the coast of England have frequently received warning, by the wireless system attached to outlying lighthouses, that vessels were drifting ashore through the fog. When the invention is perfected so that the Weather Bureau can flash warnings from shore stations to the coasting fleet plying the coastwise lanes a great step will have been taken; but at present the tests of this nature, owing to various atmospheric disturbances, have not met with complete success.

It was only a little more than a half-century ago that the present network of telegraph wires which knits continents together began with Morse's invention. A comparatively few years later the whole world was amazed at the successful laying of the first trans-oceanic cable. And now comes this new step, more wonderful perhaps than either of its predecessors. The wonder of this invention, the simplicity of it, strike the imagination with the same sense of awe that thrills one for the moment when in a blinding flash Marconi talks with Poldhu.

RECENT ADVANCES IN MEDICINE AND SURGERY

THE CONQUEST OF YELLOW FEVER AND MALARIA—CURING A DISEASE AMONG THE SOUTHERN "POOR WHITES"—NEW USES OF ANESTHETICS—DOCTOR LORENZ'S WORK—EFFORTS TO FIND A CURE FOR BLOOD POISONING

BY

A. T. BRISTOW, M.D.

AT this time, when "the world is made over every half-century," when no task seems too difficult for the force of men's minds and the energy of men's muscles, the practical science that counsels ways of keeping minds vigorous and bodies strong and healthy is adding rapidly to its equipment. Anesthesia, antiseptics, the new science of bacteriology, sanitary science, all these have been realized within less than fifty years, and new developments come with a speed that is bewildering. The discovery of today is common gossip tomorrow, and the day afterward it is history.

Two or three years ago a ship aboard of which was a case of yellow fever sailed from port to port for weeks before the passengers could find a landing, and when at last they left the boat they were quarantined for a considerable time. We know now through the investigations of the United States Yellow Fever Commission that all this hardship was unnecessary—that yellow fever spreads only through the agency of the mosquito.

The story of the investigations tells of self-sacrifice and courage that transcends the bravery of the soldier on the battlefield. The excitement of battle buoys the soldier up so that he forgets danger, and he remembers the old adage, "Every bullet has its billet." But when a man in cold blood deliberately allows a mosquito, which has fed on yellow fever patients for days, to bite him, and this with the full knowledge that he may become infected with one of the most rapidly fatal of all the tropic fevers; when men wrap themselves in the clothing taken from yellow fever corpses, and so clad lie down to sleep on beds covered with filthy blankets and sheets from yellow fever hospitals, with soiled towels from yellow fever patients

spread on their pillows, and so spend their nights for three weeks, we can call it real heroism, courage or sacrifice. It is all three. Briefly told, the story of the investigation of the United States Yellow Fever Commission in Cuba is as follows:

As the cause of yellow fever is unknown, and as animals are immune to this disease, it was necessary that all experiments be conducted upon human beings who, never having had the fever, were therefore susceptible. In order to test the theory that mosquitoes convey the fever from sick to healthy individuals, it was necessary for the investigators to submit themselves and their volunteers to the bites of insects known to have bitten yellow fever patients. As a result of their investigations the commission discovered one curious fact, namely, that the organism of infection, whatever it may be, took twelve days to travel from the mosquito's stomach to the salivary glands, and that this period might be prolonged during cold weather to eighteen days. This fact explains certain cases in which mosquitoes known to have bitten yellow fever patients nevertheless failed to communicate yellow fever to susceptible individuals. In one series of cases the mosquitoes were permitted to bite at intervals of four, six and eleven days, respectively, after having fed on yellow fever patients, without producing the disease; but the same mosquitoes used after the twelfth day gave rise to yellow fever.

Doctor James Carroll, a member of the Board, allowed himself to be bitten by a mosquito which was known to have bitten a severe case of yellow fever twelve days before. The usual period had therefore elapsed at the close of which the insect was capable of conveying disease. After five

days Doctor Carroll was taken down with the disease and passed through an attack of moderate severity. He, fortunately, recovered. Doctor J. W. Lazear was bitten by a mosquito which ten days previously had bitten a mild case of yellow fever. No result followed this bite. The twelve-day limit had not expired. It was, however, necessary that such experiments should be made in order to establish this important fact beyond a doubt. Later, while in the yellow fever hospital, Doctor Lazear deliberately allowed a mosquito of unknown species to settle on his hand. Five days afterward he developed yellow fever, and after a week's illness he died. The investigation still went on, however, and these men exposed themselves to certain infection until they had proved beyond reasonable doubt that the mosquito was a conveyor of yellow fever.

An important question still remained unanswered: Could the fever be conveyed by contact with clothing, or contracted by sleeping in a house in which yellow fever patients had died, provided mosquitoes were excluded? This question was tested in the following way: A small house was built, consisting of one room, 14 x 20 feet. It was tightly ceiled and well battened on the outside. It was provided with two small windows, 26 x 34 inches, so placed as to prevent any thorough ventilation within. In fact, everything was done to invite infection, if this were possible, without the aid of mosquitoes. Entrance to the house was effected through a vestibule arranged after the manner of an airlock in a caisson, the vestibule being divided in its middle by a screen door protected without by a solid door and having a second wire door across the inner entrance. The windows were also carefully screened. This was a tropical climate, and it was the intention of the men who had volunteered for the purpose to spend the tropical nights in a room which was tightly closed, and to which the smallest amount of ventilation necessary to life was admitted by two small windows a little more than two feet square. When the building was ready, three large cases filled with soiled clothing from yellow fever hospitals of Havana were opened, and Doctor R. P. Cook with two privates of the hospital corps entered the house and closed the doors, then unpacked these boxes, shook out the clothing and hung

it around the room. It is evident that it would have been impossible in a small room of 14 x 20 feet to have hung clothing from three large boxes in any way so that the inmates could avoid constant contact. These men lived here for twenty days. At the end of that time they were placed in quarantine for five days, but they did not develop the disease. Further experiments went on for sixty-three days, and conditions were made still more trying, but not a single individual developed the fever.

To settle the question, How does a house become infected with yellow fever? a second house was built, divided into two rooms separated by wire screens. Everything in this house was carefully disinfected by steam, and then into the large room a number of infected mosquitoes were introduced. A susceptible individual entered this room and permitted himself to be bitten a number of times, and after three days developed yellow fever. Two non-immunes slept in this house for eighteen nights in the part of the room which was screened from mosquitoes and did not develop the disease.

The conclusions are the results of months of most painstaking investigation, during every hour of which the investigators faced death by one of the most fatal of tropic diseases.

Of eleven conclusions which the commission formulated as a result of their investigations, four are of immediate public interest.

(1) Yellow fever is transmitted by means of the bite of a mosquito. (2) Yellow fever cannot be conveyed by contact with articles of clothing supposedly contaminated, and disinfection of such articles is therefore unnecessary. (3) A house may be said to be infected with yellow fever only when there are present contaminated mosquitoes. (4) The spread of yellow fever can be most effectually controlled by measures directed to the destruction of mosquitoes and protection against the bites of these insects.

At present yellow fever, which has been constantly epidemic in Cuba, has been practically stamped out. It is impossible now that epidemics of yellow fever should ever again devastate our southern ports. And it is evident that the extermination of the mosquito is a pressing necessity, not only of sanitation, but of practical economics. The cost of a single epidemic of yellow fever

would defray the expenses of mosquito extermination over an area equal to the entire region likely to be infected.

Doctor Walter Reed, the head of the commission, died this winter in Washington. His widow, under the law, has the trifling pension of \$25 per month. When we remember the shotgun quarantines of a few years ago, the hordes of trembling and often destitute refugees fleeing from the stroke of death, denied asylum and driven with guns from town to town; when we reflect on the enormous losses to commerce, the interruption to travel occasioned by a quarantine based on ignorance and selfish terror, it is impossible to overestimate the value of the work he and his associates accomplished.

The mosquito bears the same relation to malarious fevers that it does to yellow fever: it transmits the disease by its bite. There are several species of the malaria parasite, which is of microscopic size, but the variety which produces a mild infection can be readily distinguished from that which induces a dangerous fever. It was therefore possible to select for experimental purposes a parasite which would give rise to a mild attack of malaria only. The rôle of the mosquito in disseminating disease had before been suspected. As early in the past century as 1807 the theory had been propounded that the mosquito was the active agent in propagating malarial diseases. From that time there have been constant investigations to prove the theory. Commenced in 1898 and 1899, within the last two years a long series of experiments with human subjects have finally demonstrated beyond reasonable doubt that malarial fevers can only be disseminated by the bite of the mosquito, and also that certain species only of the mosquito are able to communicate the disease. It has also been proved that kerosene oil thrown upon water in which the young of the mosquito are developing, by keeping the oxygen from them, destroys them immediately.

Travelers in the South have frequently observed the extreme pallor of the so-called poor white trash; but until the past year no one has ever suspected that these people were the victims of a disease, which was, in part at least, responsible for both their mental and physical condition. They have been treated by local doctors for malaria and

anemia, they have been dosed with quinine, arsenic, iron—all to no purpose. The discovery of the true cause of these symptoms, bodily and mental, was made during the last year by Doctor C. W. Stiles, of the United States Marine Hospital Service. There is in Europe a condition of anemia which is produced by an intestinal parasite called the hook worm. This is a small worm not much larger than a sewing needle, which, when it inhabits the human intestine, occurs in large numbers. Its eggs, of microscopic size, through contaminated water or uncooked vegetables, spread the disease. Doctor Stiles went South for the purpose of ascertaining whether there was such a disease prevalent in this country. He examined some fourteen hundred convicts in one of the southern prisons, without, however, finding the disease. But going into what is known as the sand belt, he soon encountered individuals with characteristic symptoms. Weeks were spent in the affected territory. It was found that the disease was limited to the sand belt, never being found in the clay region except where the individuals had come from the sand belt. Persons moving from the clay to the sand soon became affected. The disease does not occur in the well-to-do because of their more cleanly habits of life. As many as fourteen hundred of these parasites have been found in one person's intestine. The anemia they occasion is intense. Persons affected with the disease soon tire and want to leave their work; they are incapable of continuous exertion, they contract morbid appetites—become clay-eaters; and Doctor Stiles observed one case in which the morbid appetite took the form of a predilection for live mice. The form of the affected individual is stunted and fails to develop, so that a lad or young girl of eighteen or twenty has the appearance of a child of twelve or fourteen. The disease may be cured by the administration of simple drugs to destroy the parasite. The spread of the disease is to be prevented by more cleanly personal habits and sanitary precautions. This discovery is recent, and promises to put the poor white of the South on an equality with the northern farmer in the point of health.

The recent wars in Cuba and South Africa have attracted the attention of governments to the problem of protecting their troops

from typhoid fever, a disease which numbers more victims than bullets. This also is due to the contamination of food or drink. The British Government undertook the task of attempting to protect certain of its troops sent to India and South Africa by the use of a protective serum obtained by immunizing horses against typhoid. This is injected under the skin in the same manner as the antitoxin of diphtheria. Of 11,295 men observed in the British Army, 2,835 were inoculated and 8,460 were not inoculated. Of the inoculated, less than one per cent. contracted the fever, while two and one-half per cent. of the non-inoculated contracted it. This experiment has little to commend it, for, as there were nearly four times as many men who did not receive the serum, there were four times the number exposed to infection. A more striking series of cases, however, from which a deduction might be made is the following: Among 655 individuals, 511 were inoculated. Of these, only seven were attacked; while among the 144 not inoculated there were 47 cases of typhoid fever. With regard to the prevention of this disease, however, the public are in as much need of education as the Georgia "cracker." When communities learn that careful sanitation is, in the long run, less expensive than disease, and cease to contaminate running water, wells and springs, we shall cease to have typhoid fever.

Protective and curative serums against plague and cholera have been made, two tropic diseases which, now that we have colonies in the tropics, concern us as Americans. It cannot, however, be said at present that these serums have proved as efficient protectives against their respective diseases as is vaccination against smallpox or curative as is antitoxin in cases of diphtheria.

In surgery there has been in the last year or two a constant and steady improvement in technique, due largely to the conferences which surgeons hold in their different societies. An abundant and progressive medical literature is also largely responsible for the free interchange of experiences and opinions, so that surgical events in one hospital soon become the property of all surgeons. In the latter half of 1899 a new method of anesthesia was introduced. This consisted of the introduction of a solution of cocaine within the spinal canal for the purpose of pro-

ducing an anesthesia of the sensory nerves of the body as they are given off from the spinal cord. The method is simple: the back having been thoroughly scrubbed and cleansed, a long and slender hollow needle is pushed boldly between the spines of the vertebrae until it enters the canal in the spinal column which contains the spinal cord. The cocaine solution injected into the spinal canal diffuses itself in the cerebral spinal fluid. Within varying periods of time, averaging, however, about ten minutes, complete anesthesia is established as high as the arms, and sometimes higher. It is then possible to operate without any pain whatever on the part of the patient, who is, however, entirely conscious. It seems positively uncanny to be able to carry on a conversation with a patient while performing operations ordinarily most painful. I have had a patient chat unconcernedly through an operation which involved the use of the actual cautery on the most sensitive parts of the body. Through the years 1901 and 1902 this method of anesthesia was extensively used both in this country and Europe. Surgeons, however, here at least, soon found that there was an advantage in the ordinary anesthetics, ether or chloroform. Moreover, there was an element of uncertainty about the new method. In some parts of the body anesthesia was never to be depended upon. Unpleasant after effects were not uncommon, such as long-persistent headache, sometimes lasting for two weeks. The new method used is chiefly in selected cases which are unfit for chloroform or ether. The sphere of local anesthesia by cocaine has, however, been much enlarged.

The use of the X-ray for the detection of foreign bodies has been extended through improvements in instruments and by a more thorough comprehension of the subject. Within the past year and a half a new use has been found for the Roentgen ray. It has been observed that it exercises a favorable influence on cancerous growths. It is particularly useful in superficial cancers of the skin. I have seen such growths disappear after a number of exposures to the ray. Even in unfavorable cases improvements have been noticed, such as relief from pain. Some physicians devoted to the X-ray have, it is feared, been overenthusiastic in their reports, but it is certain that many cases of cancer,

not amenable to the knife, have, for a time at least, been favorably influenced by this particular treatment.

Twice during the past two years the heart itself has been successfully sutured after stab wounds. This is an operation which can be done very rarely because such injuries are generally immediately fatal. When the wound is valve-like, or very small, this operation occasionally may be attempted with complete success.

The tour in this country of Professor Lorenz, of Vienna, has attracted public attention to his method of treating congenital dislocations of the hip joint. A child has a congenital dislocation of the hip joint when it is born with one or both of the thigh bones out of the socket. In such cases, the socket is usually too shallow, and the tense muscles resist the efforts of the surgeon to bring the head of the bone into its proper place. There are two methods of dealing with these muscles: One is by cutting them with a knife through an open wound, and the other by tearing them apart by main force underneath the skin. The latter is Doctor Lorenz's method. It is not new to the surgeons of America, and the operation has been done a number of times in different parts of the country. Its chief advantage over the open method lies in the fact that the child, in a few days after the operation, is placed on its feet with the leg in plaster and compelled to walk. It is to be understood, however, that the limb is not in the ordinary position adopted in walking. If this position were attempted the bone would immediately slip out of place again. To keep the head of the bone in its place after the dislocation has been reduced, it is necessary that the thigh be flexed nearly at a right angle on the body and extended outward. This, of course, shortens the leg, and it is necessary to put a high shoe on the foot. The leg is kept in this position by plaster of Paris bandages, which, applied when moist, rapidly set into a hard, stone-like mold, which keeps the limb rigid in the position described. The limb is then forced to bear its proportion of the weight of the body, and this has a tendency to deepen the socket. This plaster is not disturbed for eight months. At the end of this time it is removed, and, if the dislocation does not recur, in a short time the leg comes down from its abnormal position to a natural one and the child is

cured. This happy result is not attained in all the cases treated after this method, even by Doctor Lorenz himself, the relapses being about forty per cent. of the total number of cases.

There are small glandular bodies attached to the upper border of each kidney, known as the suprarenal capsules. Until recently their function was entirely unknown. A substance called adrenalin has been extracted from these glands which when placed in contact with mucous membranes in water solution renders them bloodless. This has been of great service to those surgeons who operate on the nose and throat, as they first render the vascular parts bloodless by the adrenalin solution, and anesthetize by cocaine. It is then possible for them to operate without causing either hemorrhage or pain.

Many attempts have been made to find remedies for blood poisoning. Fortunately, since the introduction of antiseptic surgery, and as a result of our knowledge of the causes of this condition, such cases, previously very common, are now quite rare. They do occur, however, and physicians have been in search of an agent, harmless to man, which would be destructive to the organism which causes blood poisoning. Up to the present time no such agent has been found. Recently some experiments have been made with formalin by introducing it into the veins in a solution of one part of formalin to five thousand of water to which a little salt has been added. It is too soon to give an opinion as to the usefulness of this treatment.

There are great problems still to be solved in surgery. Most important of all is the discovery of the cause of cancer, which hitherto has defied the most acute investigators of the world. On this problem laboratories everywhere are working, and every surgeon in every hospital. Sometimes it seems as if the secret is within our grasp—nevertheless it still eludes us. No great advances can be expected in the treatment of cancerous growths until we have solved this the most hidden secret of disease. The world owes much to the labors of scientific men. Their work is accomplished in silence, in the stillness of the laboratory, the quiet of hospital wards and in the sick-room. To their unwearied hands we may entrust without fear this most difficult problem of disease. Its solution is only postponed. No man shall call it impossible.



SAVING THE SOUTHERN FORESTS

SOME OF THE METHODS BY WHICH SCIENTIFIC FORESTRY IS REPLACING WASTEFULNESS WITH CONSERVATIVE CARE—HOW TURPENTINE WAS GATHERED—USING BLACK WALNUT FOR FENCES—PARTICULAR EXAMPLES OF BETTER MANAGEMENT

BY

OVERTON W. PRICE

ASSISTANT FORESTER OF THE DEPARTMENT OF AGRICULTURE AT WASHINGTON
Illustrated in part from photographs furnished by the United States Bureau of Forestry

THE Bureau of Forestry at Washington has lately been overwhelmed by requests from the southern States for assistance in the application of practical forestry to private lands. Back of these is the old motive of learning how the productive capacity of a forest may be preserved, and how, at the same time, the forest may be

made to yield a fair return on the capital it represents. And, although the work is young and the forest lands which are being managed conservatively are only a minute part of the southern timber lands, there is already a practical realization of what well-directed forestry can do for timber lands which have been used for each year's result



"BOXING" FOR TURPENTINE

The tree is scored each year higher up the trunk and on another side until it is girdled as high as a man can reach

rather than to conserve the lasting value of the forest. The South is prosperous, and her forests in large measure are paying for it.

Here the tree growth is among the richest and most varied in the world. And the recent movement for a national reserve in the southern Appalachians is, without doubt, leading to a better understanding of the need of careful forestry.

Just as differences in soil, slope and exposure within the limits of a farm wood-lot produce distinct forest types, so the forests of a country fall naturally in great divisions. In the South these are the southern pine forest, the northern forest and the interior hardwood forest. The limits and the conditions of these sections are interesting in many ways. In the Southern pine forest, which occupies the great coastal plain from Virginia to Texas, long-leaf pine is the characteristic tree. With it mingle the seven other southern pines in a proportion fixed by the suitability of forest conditions to their indi-



A FIRE IN A TURPENTINE ORCHARD



THE METHOD OF FELLING YELLOW PINE

Photographed by Davison



CUTTING UP YELLOW PINE

Photographed by Davison



HANDLING LOGS IN THE WOODS

Photographed by Devlin



HAULING LOGS OUT OF THE WOODS

Photographed by Devlin



TURPENTINE ORCHARDING

The deep notch to catch the drip is an invitation to windfall and damage by fire

vidual requirements. In the moist places oaks, gums, hickories and ash are prominent, while in the swamps and bayous the bald cypress reaches its best development.

The northern forest stretches southward along the Appalachian Mountains to northern Alabama. It contains a remarkable and varied mixture of trees common both in the North and in the South. The spruce, the white pine and the sugar maple find in the higher parts of the Smoky Mountains and of the Blue Ridge conditions similar to those

United States. It was the region of giant walnut, oak, cherry and yellow poplar. The hickories, ash, basswood and butternut here reached their largest size, and the forest was characterized throughout by the remarkable luxuriance of its growth.

Fifty years ago the southern States contributed only one-tenth of the total lumber product of the country. They now yield more than one-fourth, and the proportion is rising steadily. The Civil War was followed closely by a peaceful invasion of the South. Lumber-



LOADING LOGS ON A TRAIN WITH OXEN

Photographed by Durbin

of lower altitudes in the North woods; while in the mild climate of the southern foothills they are replaced by magnolias, gums and live oak. In all, the southern Appalachian Mountains contain more than one hundred different kinds of trees.

The interior hardwood forest stretches from the western base of the Appalachian Mountains to the Mississippi River, and was formerly the finest hardwood forest in the

men turned in increasing numbers from the depleted northern pineries to the hardwoods of the Appalachian Mountains and the soft woods of the coastal plain. Sawmills and settlements sprang up, a new field for labor was opened, and growing activity in the manufacture of lumber became a prominent feature in the developments of southern industries. The result has been that the South owes much of her prosperity to the

lumber industry, but the end of her timber supply is already clearly in sight.

Perhaps there is no point upon which authorities differ more than as to the standing timber in the southern States and elsewhere in this country. Our forest lands are so vast, their composition so varied, and our knowledge of them based upon so slender a thread of information, that even an approximate estimate of their contents is largely guesswork. The period necessary to exhaust the long-leaf pine at the present rate of consump-

The history of lumbering in the South differs only in detail from its development elsewhere in this country. It grew rapidly from small beginnings to a great industry, every branch of which is aimed at the prompt conversion of trees into money. Realization is gaining ground rapidly that the old form of lumbering, with its rough-and-ready methods, its enormous profits, and its disregard of the future, is a thing of the past. It has gone with the buffalo "killings," with the flush times that marked improvident use of



Photographed by Davison

LOADING LOGS ON A TRAIN WITH HORSES

tion has been reckoned to be from fifteen to thirty-five years, while statements differing quite as widely have been made for the southern hardwoods. The time that will elapse before the merchantable trees have all been cut is not the urgent question. The fact that so far no general remedy has been applied to prevent an already imminent timber famine is in itself a matter of grave national importance.

resources whose limits had not yet made themselves felt.

There is no region in the United States in which the adoption of conservative methods in lumbering is more urgent than in the South, nor one in which it is a sounder business measure. In the Pine Belt, where logging is easy and profits are large, the future crop, which it is the object of forestry to produce, is of high potential value. The successful



A TRAIN OF LOGS AT A MILL

Photographed by Devlin

reproduction of the forest requires the application of comparatively simple measures. Fires that would sweep the ground bare of seedlings in the North woods or in the Appalachian Mountains destroy only the very young long-leaf pine. After four or five years a thick casing of needles protects the seedlings from the ordinary fires—a provision of nature that has done much to preserve the long-leaf pine from extermination. But in spite of its resistance to fire and its capacity to perpetuate itself under adverse conditions, the long-leaf pine has one enemy with which it cannot cope successfully. Turpentine orcharding, the source of the great naval stores industry of the South, is yielding slowly to improved methods, but centuries cannot eradicate the harm that has been done. There is no more deplorable sight to the man who has a sense of the value of trees than the abandoned turpentine orchard—a grim array of mutilated trunks, scorched and charred where the box is made, broken by the wind, infested by insects, and worthless except to illustrate the futility of killing the goose which lays the golden eggs. The South is full of such pictures.

The forests of the southern Appalachians contain perhaps the clearest examples of misuse that this country has the misfortune to present. Fences built of prime black walnut, because walnut happened to be the tree nearest the line of the fence, enclose many a mountain field, the value of which is but a trifle compared to that of the trees from which its fence-rails were split. The region contains numberless "deadening," the local phrase for girdling the forest trees so that they die, and cultivating the ground beneath them. And in the places where the axes have been plied more vigorously and from which the great logs of tulip tree and oak have come, there are results typical of the point of view that sanctioned the walnut fences and justified the deadenings. Here the ground is piled high with the debris of the lumbering, tinder for the next fire. Here are tops and trunks smashed and riven by careless fellings, logs left lying because of small unsoundness, young growth trampled and bruised beyond necessity. Time will make mold of the debris and will heal the scars upon standing trees. As long as a remnant of the forest remains the second

crop will grow, although greatly hampered by its unfavorable surroundings. But it is the composition of the second crop which is the urgent question. With the big trees, the mother trees of the valuable species, gone, sourwoods, dogwoods and other kinds of little value are all that remain to shed the seed from which the new growth will spring.

Each development of the lumber industry has left its mark upon the southern forests. There was the era of the portable sawmill, a small but insatiable monster which moved from place to place leaving mutilated spots where it rested and destroying more timber than it sawed. Then with capital and energy and increased demand came the large sawmill, representing a million or more of invested capital, which established itself in one spot and built a settlement around it, reaching out farther and farther and cutting more and more closely throughout the neighboring country, in order to turn out its

lumber by the many millions of feet each year. The small mill, the large mill, and then the application of practical forestry—that is the logical sequence. The small mill came first because standing timber cost practically nothing in the early days, and it therefore paid best to skim the cream of it. The large mill followed because with an increase of demand grew the profit of meeting it. And since the large mill cannot be moved advantageously, and sooner or later must shut down unless new crops of timber may be obtained from the lands which have been cut over to feed it, the application of conservative forest management is its natural and inevitable consequence.

There are forests, however, which are already being managed conservatively. The domain of the University of the South, near Sewanee, Tennessee, for example, possesses an educational value far out of proportion to its comparatively small area. Cattle had



IN THE SAWMILL

Photographed by Darbois



LUMBER IN PILES

Photographed by Davis

LOADING LUMBER FOR EXPORT
At Port Arthur, Texas

Photographed by Davis



AN OLD TURPENTINE ORCHARD

The forest was culled for lumber and boxed for turpentine and then fire ran through it



REPRODUCTION OF LONG-LEAF PINE

The larger seedlings will probably survive the next fire

overgrazed the forest, fire had run through it and a slovenly form of lumbering had been practised in it long before the University was founded. Under the supervision of the Bureau, methods have been introduced which insure the production of a second crop, while the profits of lumbering have been notably increased by enforced system and economy. The joint result is that the University has gained a higher return from cutting over a quarter of its holdings than all the timber it formerly possessed was estimated to be worth. Moreover, the lumbering now husbands the productive capacity of the forest instead of destroying it.

Upon the tract of the Sawyer & Austin Lumber Company, consisting of one hundred



SHORT-LEAF PINE
In Arkansas

Photographed by Darison



AFTER THE LUMBERING

The second crop will be tardy and of low value

thousand acres of southern pines in southeastern Arkansas, an experiment in practical forestry is under way which is of direct value to other owners of pine lands in the South. It consists not only in the leaving of seed trees, in care in the fellings and in methods for the full utilization of the trees felled, but notably in a carefully devised system for the protection of cut-over areas from fire. It is upon similar protection that the future of the pine belt chiefly depends, and a demonstration of its practicability at moderate expense is the best argument for its adoption.

As a result of its work upon the Stevenson and Wetmore lands in the Smoky Mountains, the Bureau of Forestry has succeeded in introducing rules for conservative lumbering as a part of the contract under which the timber is sold. To those who have watched the progress of forestry in this country the inclusion of measures fostering the production



Photographed by Davidson

CYPRESS ON GRAND LAKE, LOUISIANA

of a second crop in a contract for the sale of stumpage is a notable step in the right direction.

The tract of the Kirby Lumber Company in southeastern Texas offers a remarkable

the preparation of which is now going on, owns the timber rights upon one and one-quarter million acres, an area approximately the same as that of the State of Delaware. It is the main source of livelihood to about



A TREE FALLING

Photographed by Lurion

opportunity for proof of the business advantages of practical forestry. The Kirby Lumber Company, which has recently applied to the Bureau of Forestry for a working plan,

fifteen thousand persons, and is remarkable for the quality of its long-leaf pine lands and the completeness of its equipment. The application of conservative management to



LONG-LEAF PINE IN LOUISIANA

Photographed by Davison

the forest of this great corporation will be of incalculable value, not only as an experiment upon the largest private holding in the United States, but also as furnishing the most forcible example that the South can afford of the fundamental change in the attitude of the lumberman toward the work of the forester.

There is no reason why the practical wisdom shown in these instances should not

govern the treatment of all the southern timber lands. The widespread adoption of scientific forestry will tend not merely to make timber property a permanent source of continued revenue, but to save the South from such secondary effects of thoughtless denuding as have played havoc with the water supply of streams in other parts of the country.



THE FOREST DISTRIBUTION IN THE EASTERN UNITED STATES
Showing the extent of the southern wooded belt that scientific forestry may preserve

GREAT QUESTIONS OUT OF THE VENEZUELAN TROUBLE

WHAT OF THE FUTURE?—SMALL HOPE OF STABLE CONDITIONS—THE FEELING OF FOREIGN RESIDENTS—THE INTEREST THAT THE SEVERAL POWERS HAVE IN THE REGION—THE GENERAL FEELING OF UNCERTAINTY

BY

JOHN CALLAN O'LAUGHLIN

THE Caribbean Sea should be called hereafter an American Lake," remarked Admiral Dewey one evening while sitting on the quarterdeck of his flagship, the *Mayflower*, during the recent naval maneuvers. "It would be well to accustom the world to the name and what it means."

The attention of the world was then riveted upon Venezuela. Ostensibly to obtain reparation for outrages upon their subjects and interests, Great Britain, Germany and Italy had destroyed the little navy of President Castro and were preparing to establish a "pacific blockade." The statesmen who pondered upon the action of the European Powers readily understood that Venezuela was an incident and that something more lay behind. In other words, the lesson it was intended she should learn was imposed for the benefit also of other American governments. Europe was asserting her interest in the affairs of the western hemisphere, and the United States, which had been informed of her intention, was standing by watching developments, its fleet, filled with ammunition, within striking distance of the scene of "pacific" hostilities.

From the time of its discovery by Columbus the Caribbean Sea has been repeatedly the ground of international conflict. It is not going too far to say that Europe and the United States are now in a sense contending for mastery there. Great Britain and Italy fell into the plan to coerce Venezuela, to obtain redress, and to maintain and, if possible, increase their prestige in the western hemisphere. Germany's primary purpose was to assert herself, to extend her influence and power and to demonstrate that she must be regarded as a factor in American affairs. The Civil War convinced Secretary

of State Seward of the necessity of placing the American flag in the Caribbean Sea; but at the time the Senate looked through different glasses on that section of the world. The Spanish-American War brought about what Mr. Seward foresaw. Porto Rico was acquired and Cuba passed under our protection. The United States induced the Danish Government to sign a treaty providing for the transfer of its possessions in the West Indies to this country; but German influence is supposed to have prevented ratification of the treaty by the Danish parliament. Now the United States is on the eve of building the Panama Canal. Its construction will increase the strategic and commercial value of the islands and of the countries bordering on the Caribbean Sea; and, in the light of the conditions present and impending, the action of the Powers with respect to Venezuela assumes an importance which must be considered seriously by the American people.

The European nations which have territorial interests in the Caribbean Sea are Great Britain, France, Denmark and Holland. Germany has not a single foot of land there, and has given repeated assurances that she has no intention of acquiring it. Her activity elsewhere, however, is remarkable. During the last seven years she has established herself in China, where she owns Kaio Chou and claims commercial control of the province of Shantung; she purchased the Caroline and Ladrone islands, with the exception of Guam, from Spain; she became sovereign over the islands of Savaii and Upolu of the Samoan group, and has increased her territorial interests in Africa. Her policies of territorial and commercial expansion move together; the one she considers the complement of the other. She has aggressively pushed her trade in Central and South

America, but her navy is not yet strong enough to justify an attempt to brush aside the Monroe Doctrine.

Commercially, the United States is the dominant power in the Caribbean Sea. The products of the islands and of the countries whose shores are washed by the waters of Admiral Dewey's American lake are practically the same. The United States is their natural market. The American acquisition of Porto Rico and the negotiation of the reciprocity treaty with Cuba seriously menace the prosperity of the other islands and affect that of the neighboring continental republics. Deprived of an outlet for their surplus products, the colonies of Europe in the Caribbean Sea must necessarily become poorer and poorer and make a greater drain upon the mother countries. The gravity of the situation was recognized by Great Britain in her recent protest against the Cuban reciprocity treaty. Already most of the islands receive financial support from Europe. Strategic reasons compel Great Britain and France to retain their West India possessions. Denmark was anxious to sell her islands, and their inhabitants desired transfer to the United States. Holland finds it necessary to credit her Dutch West Indies with \$40,000 annually.

In Curacao I asked a leading merchant how the natives would regard American protection. "We prefer to be under the Holland flag," he answered, "for the reason that Willemstadt is practically a free port, and there is little likelihood that our government will ever become involved in war. We are greatly disturbed by the probability that a German Prince will succeed to the throne if Queen Wilhelmina should have no heir. Except the few Germans here, I know of no one who desires Germany as his sovereign State. Next to Holland, we want the United States."

While practically all the West Indies are looking forward to ultimate annexation by the United States, political Venezuela entertains no such desire. A rich country, there can be no question of its ability to support itself provided it has peace. A constant succession of revolutions has brought the people to poverty. During the blockade many sold jewels in order to obtain the necessities of life. The natural effect of the action of the Powers has been to create a feeling of

hatred for them and to emphasize the dependence of the country upon the United States. Great Britain, Germany and Italy will have their claims paid, but commercially they will be losers. Plastered throughout the republic where all may read are cards which set forth the request of the government that Venezuelans refrain from purchasing goods of German, English or Italian manufacture. The newspapers in all their issues print a similar notice. The effect of this move was immediate. Shopkeepers reported a decrease in the demand for articles manufactured and imported by the countries tabooed and an increase in the sale of American and French made goods. Had the Powers considered the possible effect of hostile action, they might have looked at their trade returns and attempted a more diplomatic adjustment.

The United States leads in Venezuelan commerce. Its imports and exports for the year 1901 amounted to \$10,203,900. Germany was second in Venezuelan trade, the value of her commerce being \$3,903,200. France stood third with \$3,320,000; and Great Britain was fourth with \$3,083,400. Italy's commerce is comparatively of slight importance. "Our interests do not lie here," said an Italian official; "they exist in Argentina. The important reason why our government participated in the coercion of Venezuela was because Germany desired it."

During the blockade I ate dinner at La Guayra with a German who spoke bitterly of the exactions he had suffered. "I tell you," he said, pointing to the British man-of-war and the Italian cruiser, which were lying at anchor, "these ships should open fire on the forts and raze them to the ground. Punishment of the harshest character should be visited upon these people. They are thieves and cowards. They lay tribute upon every man who they think has money; and if he does not comply with their demands he is made to suffer. Recently I went to Guanta to collect a bill for a firm by which I was employed. In spite of secrecy, the news of it reached the general in command. He called on me and announced that he desired a "loan," and asked for a sum equal to that which I had obtained. I told him I had no money. He was incredulous and ordered a search of my baggage. When

he proposed to search my person, I replied that if he did so I should lay the matter before my Government, which would seek reparation. I also took occasion to suggest that he would receive \$1,000 if the matter were dropped. This suggestion was acceptable and I escaped without further payment. There is no security for foreign life here. A German was killed some time ago. Capital punishment is not permitted by law, and the native charged with the crime, after insistent demands by the German representative, was finally arrested and tried. He received a year's imprisonment only, and I suspect he was released before the expiration of his sentence."

Mr. W. H. D. Haggard, Minister of Great Britain to Venezuela, told me when I met him in Caracas and subsequently in Trinidad, after his departure from Venezuela, that action by his Government had become absolutely imperative. "My country was patient and long-suffering," he said. "Its subjects had been barbarously treated; vessels flying its flag had been seized without cause and their crews outraged, and demands for redress were evaded or were contemptuously put aside." Mr. Haggard's estimate of the Venezuelan people is shown by his statement that he left Caracas without announcing his intention, "because he did not care to have a repetition of the Peking trouble of 1900, when the foreign envoys in the Chinese capital were besieged by Boxers and were rescued by an international army."

On the day the blockade of Venezuelan ports was established, Vice-Admiral Sir Archibald Douglas announced that the war would be "opera bouffe" in character; that there would be no landing of marines and no bloodshed. As Vice-Admiral Douglas was commander-in-chief and had just concluded a conference with Commodore Scheder, the German squadron commander, it was expected that the blockade would have none of the usual accompaniments of war; but Vice-Admiral Douglas apparently counted too much upon the assurances of the Germans, as is shown by the bombardments which occurred at Maracaibo. Those bombardments, Commodore Scheder insisted, were the consequence of Venezuelan attack upon the German gunboat *Panther*; but the Venezuelans claim that the Germans were the aggressors, and their contention certainly

merits consideration in view of the attitude of the defense force elsewhere.

The only bombardment in which the British engaged was that of Puerto Cabello before the blockade began, and the Germans, though they were not interested, participated. Commodore Montgomerie, who, in his flagship, the *Charadis*, directed the attack upon the forts protecting Puerto Cabello, informed me that he decided to bombard only after giving the Venezuelans ample time to make reparation for a wanton and outrageous insult to a British vessel and its crew and the British flag. He regretted the necessity for this action, but he said that not a single person was struck, and the only casualties ashore resulted from two soldiers falling into a ditch and breaking their legs. British officers were surprised at the German desire to join in the bombardment of Puerto Cabello.

I found the sentiment of the British generally was that their Government had made a mistake in joining with the Germans. They have not forgotten—though it was suggested with some bitterness that London had—the cablegram sent by Emperor William to President Kruger of the South African Republic on the eve of the Boer war, and one of them asserted that Kipling was justified in decrying in verse the alliance between the two antipathetic nations. "The people of the United States," said a high-ranking naval officer, whom I met at Trinidad, "believe that Germany is enlarging her navy in order to destroy the Monroe Doctrine. I tell you Germany rather contemplates a war with Great Britain. Our interests clash far more with hers than do yours."

It is the opinion of foreigners in Venezuela that there will never be continued peace under native administration, and that foreign control is necessary if the country is to be orderly and prosperous. Germans would naturally prefer the extension of German rule to Venezuela, but this is clearly impossible with the United States determined to uphold the Monroe Doctrine; and they therefore advocate joint control by the Powers having subjects and interests there. British subjects in Venezuela and British colonists in Trinidad favor this plan also. But they recognize that the United States would never permit European participation in an American government; and they say that if their suggestion cannot be adopted, then the United

States alone should undertake the government of the republic.

"Venezuela knows that you will not permit her to suffer territorially," said one of these men. "She understands that if any European nation attempts to punish her seriously for outrages perpetrated upon their subjects and interests, the United States will intervene and say 'Hands off.' You, therefore, are responsible for her excesses though you specifically disclaim responsibility. If you propose to enforce the Monroe Doctrine and enjoy the advantage consequent from such enforcement, then you should discharge the attendant obligations."

While President Castro promptly appealed to the Monroe Doctrine when the occasion for it developed, he and other Venezuelans, as well as the whole of Central and South America, fear that the United States has a selfish purpose in its enforcement.

During a conversation with President Castro I asked him what he thought of the Monroe Doctrine. He considered a moment. "Properly interpreted and properly applied," he responded, "it is an excellent principle." In other words, he reserved to himself and to his country the right to say when the United States was justified in its application. President Castro's answer is that of every other Venezuelan politician. Among business men a sentiment is growing in favor of partial control of the republic by the United States. They see no prospect of stability under native administration. A formidable revolution under the leadership of General Matos, which has the covert support of Great Britain and Germany, is now in progress against Castro's Government. "If Matos succeed," said a Venezuelan merchant, "a revolution will be inaugurated against him by one of his own men, if Castro does not keep up the struggle. That will mean a continuance of the present disturbed conditions. It will also mean further calls upon business houses for money by the new Government and the revolutionary forces. No Venezuelan cares to see an inch of the territory of his country seized by a foreign government; all would prefer native to foreign administration, even though the United States were in control. But if some arrangement could be reached by which the United States would guarantee stability of government, as in the case of Cuba, then

Venezuela would enter upon an era of prosperity which would parallel that of the Great Northern Republic. We have rich natural resources; our people are intelligent, energetic and industrious, and our national debt is small. The sole thing we need—stable government—we have not, and the United States owes it to its own people as well as to other nations to see that this need is supplied."

It was apparent from the pause that followed this exposition of Venezuela's necessity that I was expected to make a reply to this comprehensive statement.

"But the United States could not intervene in Venezuela," I remarked. "You know that in spite of the unselfish attitude we have observed for eighty years, we are suspected of a desire to extend our sovereignty over the whole of the western hemisphere. To put our foot in Venezuela would be to arouse every other American nation and to affect seriously our standing with them. Besides, we have problems that engage our attention elsewhere."

"The suspicion that you propose to enlarge your territory," I was told, "was confirmed by your acquisition of Porto Rico and the Philippines and your demand of Cuba that she give you virtual control while retaining her independence. Venezuela is on your conscience, and as long as you fail to act Europe will create pretexts, ostensibly to protect her interests, but really to increase her prestige at your expense."

Still the important fact which strikes the observer in Venezuela is the satisfactory position occupied by the United States. During the bombardment of Maracaibo an American walking along the streets of Caracas frequently heard the exclamation: "America for the Americans."

The Venezuelan newspapers have never tired of asserting that to the western world Venezuela must be considered as the touchstone by which the temper of the Monroe Doctrine was to be tried. By the construction of the Panama Canal the commercial and strategical value of Venezuela and Antillean territory will be immeasurably increased. It is the realization of this that contributed to present European activity, and it is a like realization that is responsible for Admiral Dewey's designation of the Caribbean Sea as an American lake.

A STATEMENT OF THE AMERICAN AIM

HOW CITIZENSHIP IN THE UNITED STATES DIFFERS FROM CITIZENSHIP IN ALL OTHER COUNTRIES—THE SINCERITY OF PATRIOTISM AND THE BREADTH OF SYMPATHY—THE NECESSARY APPLICATION OF THE AMERICAN IDEA TO INDUSTRY AND TO SOCIAL RELATIONS

BY

AUSTIN BIERBOWER

AMERICAN citizenship differs in several essentials from citizenship in other countries, and some peculiar duties arise from the difference which require special attention now when our institutions are receiving a general reëxamination and are subjected to special strain through the attempt at expansion.

An American, having a great country, has wide relations in his patriotism. He loves something great, which is important in the character of a people. When a man must fix his affections on the small it tends to belittle him. One is measured by what one loves. With our vast and opulent domain, we need never be ashamed of the object of our affection, but can be enthusiastic for our country without seeming ridiculous; which a Belgian or Portuguese can hardly be. While it is demoralizing to have to champion a petty cause (since in trying to maintain its importance one unconsciously develops insincerity), the espousal of the great protects all the virtues. The American need not be afraid of exaggeration if he talks in superlatives, for he can boast of his country without lying. His difficulty is to reach the truth rather than to keep from transcending it, and he can indulge in limitless ideals without despair over their ultimate realization.

The first characteristic of American citizenship, therefore, is a confident pride of country that goes parallel with love of country, a pride that is well founded and honest; so that an American feels a satisfactory self-respect as an American, and seldom gets anything but respect from others. He cannot be easily ridiculed, and he need not be sensitive about foreign opinions. A scoffer who would laugh at the United States is like the simpleton who would ridicule the sun. Owing to our size, we are not often challenged to fight for our

country, even in words, for most antagonists seem unworthy of us. Only three or four nations are ever compared with ours, and we need not fear the comparison then. The American can accordingly indulge a generous high-mindedness toward the world without the usual temptations to jealousy which characterize small peoples.

A second feature of American citizenship springs from the fact that we are a growing country. Great as we are, we expect to be greater. Our eyes are turned to the future and our pride is founded in hope. It matters much whether one is on the rising or declining side in his feelings, whether his enthusiasm is a swelling or a receding tide. Americans are in the line of the world's movements, going in the direction in which things are enlarging. Our country is to take part in nearly all events that are to come, and to act with the whole world as an arena. We have a career before us rather than behind us, and enter on battlefields yet to be won. We are in the line of permanent movements, too, and not of mere episodes. Our acts must have an influence that is to grow with the enlargement of the country and of the world's civilization; so that in making history, we are not building a fabric that is soon to fall, but one that will grow for centuries. Like King Arthur and Romulus, we are beginning a State, and not, like Kosciusko, losing one. While the eloquence of Demosthenes was lost because he spoke for a falling Greece, that of Patrick Henry and Beecher was treasured up and invested with perpetual power because they spoke for a coming empire. It is the rare privilege of Americans to do what will not be lost on humanity, as the deeds of most centuries were. What they build will be build on. We are working at a foundation rather than a pinnacle, and are looking

up instead of down. Growth is to be our next movement. "Forward" is our watchword, rather than "Halt."

A third feature of American citizenship results from the fact that our country represents liberty and equality, so that in being proud of our country we are proud of something good. In taking up the cause of the United States one takes up the cause of right. Most countries represent tyranny or some form of inequality, so that their citizens, to be patriotic, must be unjust. In Europe they are committed to the interests of the Bourbons or the Hapsburgs, and stand for the aggrandizement of privileged classes. We stand for the equal rights of all the people; and nothing can be better. We have no royalty to defend, no discriminations to maintain, no wrongs to perpetuate. There is no contradiction between our patriotism and our ethics. One need not be a bad man to be a good American. It requires no qualms of conscience to take up any of our principles. Feeling that ours is the cause of humanity, we can enter as heartily into the American spirit as into a religious or philanthropic movement. This is an important element in our moral and intellectual character. We need not stretch our consciences or warp our judgment to be loyal, but can give our undivided selves to our cause without abating any of our manhood. Americanism is a sum of virtues, standing for a principle. Our flag has a meaning of which we approve. It is demoralizing when one's national sentiments are in conflict with one's private convictions. The liberals of most foreign countries are disaffected toward their national institutions, so that many of their best citizens live not in the spirit of their country, but in hope of revolution. In America, on the other hand, loyalty is a virtue; the good are committed to our institutions; and to be more of an American is to be a better man. One cannot have our national spirit and be unjust. Our underlying principles—liberty and equality—are the substance of all governmental ideals, and in America the ideal and the practical are for the first time reconciled. Our constitution expresses their union in the most substantial form yet attained.

Another circumstance affecting American citizenship is the fact that our country represents progress. The traditions of our fathers have little weight when pitted against

our common sense. The world's best ideas have a chance to be put into practice. Thought and activity are alike free. Old machinery, old opinions, old institutions are constantly passing away, and we are in a country of revision. Americans are accordingly independent and aggressive. Instead of being a led people, chained to precedent, they search for the unknown, rather than try to recall the forgotten. Frontiersmen rather than antiquarians in civilization, we are carving a way, instead of digging up the forgotten paths. We are more interested in discovering new truths than in handing down old ones. The search for the better is our most characteristic occupation—invention. We are most interested in what has never been done at all, and never known at all. News is everywhere sought in thought, as novelty is in action. The turning of the unknown into the known and of the untried into experience is our most peculiar and characteristic mission.

The first duty of American citizenship is a liberal patriotism. Nor is this feeling of magnanimity for land and numbers alone. American patriotism must be a love not of race but of many kinds of people—of English, Germans, Italians, Irish, Scandinavians, Africans, Chinese, Indians and Tagals. It must be cosmopolitan. American patriotism comes near being humanitarianism.

Another duty of American citizenship is to apply our principles of liberality and equality to our new domain and keep our republicanism intact through our varied expansion. While we can afford to grow beyond our limits and even beyond our continent, we cannot afford to grow beyond our principles. We are making great experiments and encountering new dangers in our development from primitive simplicity, and the problem is how to go forward without shifting from our traditional foundation of equal rights and universal liberty.

A more immediate duty of American citizenship, and one appealing directly to the individual, is to apply our principle of equality to our business and social relations. We cannot have the people politically equal if they are unequal in other respects. While all cannot have the same wealth, rich and poor classes being unavoidable, as also intelligent and ignorant, we should, by giving all an equal chance, reduce these con-

ditions, and especially avoid great extremes. It is not safe, either for our republic or for the wealthy, that there should be many fortunes which exhaust the materials which make competencies for thousands. The very rich menace the moderately wealthy, and the very poor menace in turn the rich. All must have a competency or hope of it.

In the children we should start anew with all our American rights. The common school, which provides an equal education to a certain point and sends out the youth equipped alike for the battle of life, is the great leveling agency for preserving our American spirit. It is our periodical equalizer, which, removing the advantages of the fathers, restores the common equality of nature. Our peculiar American idea is to furnish all equal weapons and then see that there is no unfairness in the fight; and as often as some unavoidably get too far ahead in one generation, to start all over again in the children of the next.

Another duty of American citizenship is to adjust with like liberality our political idea of equality to our social relations. With a better acquaintance with men we find them more alike. The workingman's intelligence rivals that of the professional man, and the qualifications of the artisan are everywhere recognized as a culture. There are virtues in the poor which the ancient world did not know.

A liberal appreciation of the varieties of culture should therefore characterize the American in this age of differentiation, especially of that culture which differs from his own. He has entered into a confederacy with all kinds of men, and he should feel congenial amid a great variety of differences. Many are willingly poor that they may be scholarly or that they may work out some problem for the race. Others sacrifice position for their children, and all who deprive themselves of anything make it possible for others to have more of it; and they should suffer no additional disability for this heroism. Those who have the advantages ought not to discriminate against those who concede them.

Refinement, not exclusiveness, ought to be the test of social distinction in a republic, which in all things is inclusive. One does not lose his respectability in this country by allowing others to be respectable, or degrade himself by mixing with many people.

Nearly every social problem that now confronts us might be solved by simply a return of the people to a manly and generous common sense, which would enable them to enjoy their possessions without a sacrifice of taste or happiness, and at the same time make such enjoyments more common. The American aim is simply the welfare of the race in which we have enlisted a part of the race and are trying to stand as an example for all others.

A HUNDRED YEARS OF OHIO

A STATE THAT HAS PEOPLED MANY COMMONWEALTHS AND EXERTED A CONTINENTAL INFLUENCE—GREAT FIGURES WHICH SHE HAS FURNISHED TO THE COUNTRY'S SERVICE—HER TRIUMPHS IN INDUSTRY, EDUCATION AND PROGRESS—CAUSES OF HER POLITICAL PROMINENCE IN THE REPUBLIC

BY

CHARLES M. HARVEY

OHIO, a hundred years young, will have the good will of the whole American people on May 21 and 22, 1903, when, at her old capital at Chillicothe, she will celebrate the centenary of her admission to statehood. In the large sense this will be a national observance, because, almost from the days of Edward Tiffin, her first Governor, down to those of George K. Nash, her present

executive, Ohio has played a conspicuous part in the political and also in the social life of the republic.

The fourth of the States in population and wealth (New York, Pennsylvania and Illinois being the only commonwealths which lead her in these respects), the oldest State west of the Alleghanies except Kentucky and Tennessee, Ohio is a large and important part of the

American nation. The State which gave birth to all the Presidents—Grant, Hayes, Garfield, Harrison and McKinley—elected from the close of the Lincoln-Johnson term to the present day, except Mr. Cleveland, and which claims another President, William Henry Harrison (through residence for many years at the time of his election and through his identification with her political and social interests), Ohio is also the mother of many other statesmen. In the present Senate her sons by birth include not only the two men whom she herself has in that body, but



A TABLET UNVEILED AT CHILLICOTHE

Fairbanks and Beveridge of Indiana, Allison of Iowa, Alger of Michigan, and Scott and Elkins of West Virginia. She is the birthplace of eighteen of her own twenty-two members of the House of Representatives, as well as of Hitt, Selby, Crowley and George W. Smith, members from Illinois; Landis of Indiana, Rumble, Hull and Hepburn of Iowa; Bowersock and Calderhead of Kansas; Irwin of Kentucky, and Gardner of Michigan. Secretary of State John Hay is an Ohio man by residence, as, by birth and residence, were his two immediate predecessors, William R. Day and John Sherman. In William H. Taft, the Governor of the Philippines, Ohio has contributed a man who has made American sway in the antipodes popular.

Ohio is likewise the mother of States. She has contributed more of her native-born children to the building of other communities than any other State of the forty-five except New York, and, in proportion to population, her contribution has been far greater than New York's. Most of them have gone West, though many have gone South, and some of them, reversing the sun's course, have moved

to the East. Every city of any consequence from New York Bay to the Golden Gate has a colony of Ohioans. New York's Ohio society includes, among others, Whitelaw Reid, editor of the *Tribune*, Edison and Brush, electricians, and Ward, the sculptor.

OHIO AS AN EMPIRE BUILDER

About the time that Jefferson was felicitating his fellow Americans on possessing a "chosen country with room enough for our descendants to the thousandth and thousandth generation," although the nation's westerly boundary was then the Mississippi River, Ohioans were beginning to spread westward into the region that is now Indiana and Illinois, and were enlarging and giving impetus to that volume of immigration which has peopled a country three times as large as Jefferson had in mind—and all within three generations.

In 1900 there were 1,114,000 natives of Ohio residing in other parts of the United States than the State of their birth. New York, with 3,000,000 more inhabitants than Ohio, was the only State which made a greater contribution (1,289,000) to the rest of the country's population, and this was only 175,000 larger than Ohio's. Pennsylvania with 937,463 and Illinois with 1,012,000 natives living outside their own boundaries in 1900, each of which is larger than Ohio, made smaller additions to the citizenship of the rest of the country. Almost half the entire contribution made by the dozen States of the North Central division to the stalwart Americanism of the part of the United States outside their own borders was furnished by the Buckeye State alone.

There were 178,000 native Ohioans residing in Indiana in 1900, or more than those of the combined three next highest States—Kentucky, Illinois and Pennsylvania. In Illinois there were 137,000 Ohio men, as against 128,000 from Indiana and 111,000 from New York. Kansas, Michigan and Iowa each had 88,000 Buckeyes, Missouri, 80,000, California, 34,000, and Oregon, 13,000, while 26,000 of them were in New York.

Naturally this wide diffusion of Ohio men enables them to see things from more angles, makes them more hospitable to new views, and causes them to think in larger terms geographically. Many of them have risen to high stations in their new homes. But



OHIO UNIVERSITY, ATHENS, OHIO

The building to the left of the centre is the oldest building for higher education in the original Northwest Territory



THE SOLDIERS' MONUMENT, ATHENS, OHIO

At the entrance of the campus of Ohio University



THE OLDEST NEWSPAPER IN OHIO
Established in 1880



A HISTORIC SPOT IN OHIO

while Ohio has thus been making a large contribution to those forces of national expansion which have made the United States fill a big place on the world's map and win a still larger place in the world's councils, her own population has grown a hundredfold in



THE STATE HOUSE AT COLUMBUS, OHIO

Photographed by Baker



Photograph by Walter

THE STATE HOUSE YARD AT COLUMBUS, OHIO

Beginning at the left, the four figures in sight on the statue are Generals Sherman, Grant and Sheridan and Secretary Stanton



GOVERNOR GEORGE K. NASH, OF OHIO

the century, increasing from the 45,000 of the latter part of St. Clair's governorship of the territory to the 4,500,000 of this fourth year of Governor Nash's.

At the outset Ohio owed a vast debt to the country. General Rufus Putnam's Massachusetts Revolutionary soldiers settled the Marietta region, at the mouth of the Muskingum. John Cleves Symmes' New Jersey men and Pennsylvanians, most of them also old soldiers, went to Cincinnati. General Nathaniel Massie, with his Virginia and Kentucky soldiers, many of them being General George Rogers Clark's victors at Kaskaskia and Vincennes, who won the great Northwest for the United States, colonized Virginia's military lands between the two Miamis. Moses Cleaveland, along the border of Lake Erie, founded his New Connecticut, the later Western Reserve, peopling it with some of the choicest spirits of New England. None but the daring and enterprising attempted to cross the Alleghanies into the Ohio valley in those days, and none but the physically capable got there. Thus the original Ohioan was a composite of the best that was in American blood and training. The debt which the Buckeye State thus incurred to the country has been paid with compound interest in the past hundred years through the diffusion which has made the whole West an expansion of Ohio.

THE STATE'S NATIONAL FIGURES

On a granite block just erected in the cemetery at Mansfield, which marks the grave of a distinguished American, are these words and these only: "John Sherman." It would be as impossible to write the history of the politics of the United States from 1855 to 1898 without telling the story of that man's deeds, as it would be to write the annals of the war of 1861-65 without giving a commanding space to the achievements of that other Ohio man, elected President in 1868, of whom "Miles O'Reilly" wrote:

If you ask what State he hails from,
Our sole reply shall be,
He hails from Appomattox
And its famous apple tree.

In the war of secession and the reconstruction period Ohio furnished to the country's service in civil station such national characters as Chase, the head of the Treasury and Chief Justice of the Supreme Court; Stanton,

who "organized victory" for the Union cause; Sherman, the Wades (Benjamin F. and Edward), Corwin, Pugh, John McLean, Allen, Payne, Cox, Lewis D. Campbell, Schenck, Garfield, Keifer, Hayes, Thurman, Pendleton, Bingham, Riddle, Ashley, the younger Thomas Ewing, and Jay Cooke, who financed the country's bonds and provided the sinews of war for the Government. To the list of the nation's fighters in those days it furnished Grant, Sherman, Sheridan, Rosecrans, McPherson, Gilmore, two or three of the McCooks, Custer, O. M. Mitchell, Buell, Jacob D. Cox, Garfield and Hayes. An enumeration of Ohio's great personages from the fall of Sumter to the restoration of the Confederate States to their old relations to the Union sounds like a roll-call of the entire nation's ablest and greatest sons during that period.

Back in 1814, when Ohio was the newest State excepting Louisiana, Madison called Return J. Meigs (who had been United States Senator and Governor) to the office of Postmaster General. Between his days and the Civil War period McLean, Cass, Ewing and Corwin were among the eminent Ohioans who held Cabinet posts, and since the reconstruction Stanbery, Cox, Foster, Delano and Harmon have been members of presidential councils, while the State portfolio has just been held by three Ohio men—Sherman, Day and Hay—in succession. Of the eight members of Harrison's Cabinet of 1889, all of whom were residents of States other than Ohio, five were Ohioans by birth.

A STATE OF FIERCE POLITICAL FEUDS

There has been a dash of savagery in Ohio's politics from the beginning, as John Sherman could have testified, for he was one of its recent and frequent victims. The region now called Ohio was claimed by France and England, and by the Shawnees, Mingoes and other red men at an earlier and later date. England drove France out of the region, and then England was driven out by the Americans, after which the Indians turned on them. Before the Indians were finally disposed of, the feud between the Federalist territorial Governor, St. Clair, and the fierce Jeffersonian Democracy of the frontier, under the lead of Tiffin, Worthington and their associates, resulted in St. Clair's removal by Jefferson under circumstances of peculiar harshness,

and on the eve of the State's admission, which would itself have brought his service to an end. Tiffin, St. Clair's leading antagonist, and the State's first Governor, was himself a victim of the same ferocity a quarter of a century later, when he was removed, while on his deathbed, from the office of Surveyor General of the Northwest by President Jackson in 1829, because Tiffin had supported Clay for President in 1824, when the election went to Adams, and because he did not support anybody in 1828, when Jackson was elected. Thus he made himself constructively an enemy of Jackson, for everybody who was not for "Old Hickory" was deemed to be against him.

There has thus been a spirit of contentiousness and barbarity in Ohio politics from a date anterior to Ohio's existence as an organized community. After Chase's death Ohio's most conspicuous son was Sherman; and Sherman, by reason of his long and able service in the House, the Senate and the Cabinet, became an avowed aspirant to the Presidency. A prominent and active candidate in the conventions of 1880, 1884 and 1888, he was beaten each time, partly through treachery in his own camp, by men of far less political experience. Although he was betrayed as often and as badly as Clay or Webster, he never was guilty on that account of the petulance and weakness shown by those leaders, but preserved his courage and balance to the last. Foraker and Hanna have taken part in recent years in as implacable feuds as those in which Sherman was beaten, though neither was in the rôle of a presidential aspirant.

A COMMUNITY OF COLOSSAL ACTIVITIES

When, in the summer of 1870, John D. Rockefeller, his brother William, Stephen V. Harkness, Samuel Andrews and Henry M. Flagler, petroleum refiners, with their headquarters in Cleveland, consolidated their interests, gained control of the railroads for their purposes, and established the Standard Oil Company, that quickly became the United States' largest industrial combination under a single head, the world's original "octopus" came into being. But the combination was even more important for what it foreshadowed than for what it immediately and directly accomplished. It set an example for that consolidation which has

seized most of the great activities within the past dozen years, which has given capital and labor an immeasurably larger power than they ever had before, and which has enabled the United States to furnish the greater part of its own needs in the manufactures and to make industrial conquests in Europe and all the rest of the globe. That pooling, in the capital of Ohio's Western Reserve, of the oil men's interests (and the Standard, in January, 1903, paid its shareholders \$30,000,000 in dividends for 1902) a third of a century ago was the beginning of the application on a world-conquering scale of that industrial and financial concentration and combination which has thrown open every great country on earth to the "American invasion."

Nature as well as man contributed to make Ohio's fortune. With a great waterway, Lake Erie, on her northern border, and another, the Ohio River, on her southern and eastern boundary, she was liberally endowed with fortune's favors. The President's grand-uncle, Nicholas J. Roosevelt, with capital furnished by Fulton, Livingston and himself, built near Pittsburg the first steamboat that ran on western waters, the *New Orleans*, which went down the Ohio in 1811. A few years later steamboats started on the great lakes, on the State's opposite verge. Canals connecting the Ohio with Lake Erie began to be built in 1825. In that year Lafayette, on a tour through the United States, called Ohio the "eighth wonder of the world" on account of its industrial activity and general prosperity. The national road, running westward from the Potomac, was completed to the Indiana line by 1838, but by that time the railroads began to supersede that thoroughfare. All the important trunk lines running east and west before the Civil War were compelled by the exigencies of the slavery interest to run north of the Ohio River, which meant through that State. Most of them run through it yet.

Geography, transportation facilities, the discoveries of coal, iron ore, petroleum, natural gas and other material riches, and the existence of great hard-wood forests within it, gave Ohio the fourth place in the list of States in 1900 in the value of its manufactured products. It stood first among the States in that year in the production of wagon and carriage materials and in the manufacture of wagons and carriages, as well

as in the aggregate of its manufacture of the various sorts of clay products; second in iron and steel output, in agricultural implements and in food preparations; third in the products of foundries and machine shops, of flouring and grist mills, and in distilled liquors, tobacco, cigars and cigarettes; fourth in the factory product of boots and shoes, car and general shop construction and repairs by steam railroad companies, in the factory product of women's clothing, glass, petroleum refining, and rubber and elastic goods; and fifth in the factory product of men's clothing, in electrical apparatus and supplies, malt liquors, planing-mill products, and in book and job printing, and the printing and publishing of newspapers and periodicals.

For the past score of years the centre of the manufacturing of the United States has been in Ohio, just as the population centre was there from 1860 to 1880, and then passed into Indiana, where it yet is. The country's manufacturing centre was nine miles south-east of McKinley's home in Canton in 1890, the year of the enactment of the McKinley tariff. It was seventeen miles southeast of Mansfield, the home of John Sherman, in 1900.

A GREAT EDUCATIONAL CENTRE

But empire building, politics, war and industry do not exhaust the scope of Ohio's preëminence. Her forty-one colleges and universities entitled to grant degrees exceed in number those of Illinois, which State ranks next to Ohio in this respect. The first-born of her seats of learning, the Ohio University, situated at Athens, in the county of that name, may truthfully be said to be actually older than the State of Ohio.

A clause in the Ordinance of 1787—the West's Magna Charta—sets forth that, "Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." Under the contract in that year between the Ohio Company of Associates and the Continental Congress two townships of land were set apart for the purpose of a university. On January 9, 1802—a year and seven weeks before the inauguration of Tiffin, the State's first Governor—the territorial legislature enacted that: "There shall be an university instituted and established in the town of Athens," and a charter was granted to it in

1804. This is the Ohio University, the oldest institution of learning north of the Ohio River, and the first anywhere in the United States endowed by Congress. It must not be confounded with the Ohio State University, a larger and newer institution (established in 1872), situated in Columbus, the State capital. Thomas Ewing, United States Senator and a member of W. H. Harrison's and Taylor's Cabinets, has the distinction of receiving, on his graduation from Ohio University, the first degree of A. B. ever granted in the Northwest.

In addition to the two just mentioned, some of Ohio's institutions of the higher learning—Western Reserve, Kenyon (of which Rutherford B. Hayes was an alumnus), Oberlin, Miami (from which Benjamin Harrison was graduated), Wesleyan, Antioch, Hiram (which Garfield attended for a time, though he finished at Williams), Marietta, and others—are known all over the country. Ohio has contributed many men of eminence to institutions outside her own borders, among them in recent years being Burke A. Hinsdale, of Michigan University, and George T. Ladd, of Yale. Some of these are very creditable successors to Antioch's old president, Horace Mann, and to Finney, Mahan, Fairchild, Lyman Beecher and others connected with Ohio's schools in the earlier days. Platt R. Spencer began, in a little log school-house near Geneva, Ohio, the system of penmanship which afterward spread all over the country. Oberlin, established in 1833, open to all races and both sexes, was the pioneer in coeducation, which has since extended all over the West, and has furnished the first concrete demonstration of complete liberty, equality and fraternity which the world throughout its history has ever seen.

The large number of the institutions of the higher learning in that State gives every resident a chance to get all the educational advantages at his own door; and they explain the wide prevalence of college graduates among her public men. This has much to do, too, with the fact that there are fewer illiterates in Ohio in proportion to population than in any other States except Nebraska, Iowa and Oregon, 99.51 per cent. of Ohio's people between ten and fourteen years of age being able to read and write.

Another educational agency, the newspaper, appeared in Ohio even earlier than the college. In the cluster of log huts with

their three hundred inhabitants which St. Clair christened Cincinnati, in honor of the society to which he belonged, William Maxwell, in 1793 (earlier than the establishment of any of New York City's present newspapers except the *Commercial Advertiser*, founded in the same year), began printing the *Centinel of the Northwestern Territory*, the first newspaper published north of the Ohio. Maxwell's paper's descendant, under consolidations, reconstructions and changes of name, is today Cincinnati's *Commercial-Tribune*, the oldest newspaper in any western State. Nathaniel Willis in 1800 started the *Scioto Gazette*, which is flourishing today, in Chillicothe, then the territorial capital, and afterward for years the capital of the State. The fourth State in population, Ohio is fourth also in 1903 in the number of her newspapers, although she has more newspapers in proportion to population than either New York or Pennsylvania.

Among her literary celebrities residing outside her borders are Howells, "Susan Coolidge," and Edith Thomas, as well as the historians, James Ford Rhodes, Hubert Howe Bancroft and William M. Sloane. While residing in Cincinnati with her husband, Calvin E. Stowe, who was connected with Lane Theological Seminary, of which her father, Doctor Lyman Beecher, was president, Harriet Beecher Stowe got some of the incidents, scenes and suggestions which inspired "Uncle Tom's Cabin."

CAUSES OF OHIO'S POLITICAL PRE-EMINENCE

"I suppose that Ohio has got all that she deserves," said General Garfield, on the morning of March 4, 1881, just as he left his hotel in Washington to go to his inauguration. "Ohio has got all that the other States will stand, anyhow," said a distinguished New York Republican leader, to whom these words were addressed.

Unmistakably that State had the centre of the stage on that day. Hayes, the retiring President, made way for Garfield, to whom Chief Justice Waite administered the oath of office, and close to these the other most conspicuous personages on the platform were William T. Sherman, Commanding General of the Army, Philip H. Sheridan, second in command, and John Sherman, who had been the largest figure in Hayes' Cabinet, who had just been returned to the Senate, and

who was destined to have a longer career than that body than any other man who ever entered it—all natives and residents of the commonwealth except Sheridan, who, though born elsewhere, passed the greater part of his life in the State of Ohio.

What have been the causes of Ohio's pre-eminence in America's public life of the past few decades? Some of them may be broadly outlined thus: Starting out with the best blood of the nation, situated at the gateway of the great West, she had at the outset a majority of the immigrants from the States which furnished the bulk of the migrating peoples and of the European immigrants, and she was the pathway of those who went farther into the Mississippi Valley, or beyond the great river. Situated at the meeting point of the North and the South, the East and the West, of the later days, she focused and reflected all the streams of national tendency. Location, lineage and education gave her citizens an initiative, a daring and an individualism which enabled them to impress themselves on the country's social affairs and on politics.

As a path-breaker in politics she furnished in Thomas Morris the earliest avowed abolitionist who ever served in Congress. She gave more votes to Birney, the Liberty party's candidate for President in 1840 and 1844, than all the rest of the West combined. More stations of the underground railroad were in Ohio than in any other State. This courage and initiative were represented even in follies. Her Vallandigham became the leader of the Copperheads of the North in the Civil War days, but he was overthrown while a candidate for Governor of Ohio in 1863, by John Brough, the Unionist nominee, by a majority of 101,000, the broadest margin ever gained by a candidate for Governor in any State up to that time. Under the leadership of Pendleton, Allen and others, she incubated greenbackism in 1867, and quickly gave it a national vogue, but the same spirit of Ohio independence and courage, incarnated in Rutherford B. Hayes, defeated Allen in the Governorship canvass of 1875, checked the rise of the Greenback wave, overthrowing the so-called "Ohio idea," and won for Hayes the presidency in 1876. Tom L. Johnson, running a Socialist programme with a circus attachment, was beaten in the State election of 1902.

Her independence and individualism made her a doubtful State in the Whig party's days, and sent her occasionally to that party's side. Although won by the Republicans in every presidential canvass since their party first appeared, her Republican lead has often been short, and it was so small in 1892 that one Cleveland elector squeezed in, notwithstanding the fact that the Republican candidate was one of her native sons, Benjamin Harrison. Tod and Brough, Democrats—both supported by the Republicans on Union tickets—were elected Governors of Ohio during the Civil War. Several Democrats, in straight party fights, carried the State for Governor since the war. Beginning with Thurman, who succeeded the old Republican stalwart, Benjamin F. Wade, the Democrats had one member of Ohio's delegation in the Senate from 1869 to 1897, when Calvin S. Brice retired, and for part of this quarter of a century they had two members in the Senatorial chamber.

An "October State" until a comparatively recent time, her State elections every four years, which occurred two or three weeks before the presidential vote of the country was cast, assumed a national character, which sent into that State the strongest stump-speakers that each party could muster. Thus the canvass commanded the entire country's attention. The election of a Governor in 1903, in which the Republicans will select a new man and in which the Democrats intend to make a supreme effort, will attract more attention than any other State campaign of the year. To a larger extent than most of the other States, Ohio has selected strong men for both branches of Congress, and has kept them there for long periods, Sherman's thirty-two-years' service in the Senate exceeding that of Benton, William R. King, Justin S. Morrill, or any other person who ever sat in that chamber. Moreover, Sherman was in the House six years and in the Cabinet more than five years. From 1820 to 1890, when Illinois got ahead of it, Ohio was the most populous of all the western States, and for most of this time it was the third State of the Union, and its electoral vote was correspondingly an object of great attraction for all parties. Here are some of the reasons why Ohio won the reputation, obtained the vogue and exerted the sway which gained national preferment for its sons.

Ohio has made much history. She began making it long before her admission as a State. Greater than Trojan wars were waged within her borders in the wild brave days of the country's youth. The story of Ohio's career is an epic of the conquest of America.

At the annual dinner of the Ohio Society in New York City, on January 16, Secretary of State Hay corroborated the conclusions of Mr. Harvey in the following words:

"A distinguished American some time ago leaped into unmerited fame by saying 'Some men are born great, others are born in Ohio.' This is mere pleonasm, for a man who is born in Ohio is born great. I can say this as the rest of you cannot—without the reproach of egotism, for I have suffered all my life under the handicap of not having been born in that fortunate commonwealth. I was born in Indiana, I grew up in Illinois, I was educated in Rhode Island, and it is no blame to that scholarly community that I know so little.

"I learned my law in Springfield and my politics in Washington, my diplomacy in Europe, Asia and Africa. I have a farm in New Hampshire and desk-room in the District of Columbia.

"Of my immediate progenitors, my mother was from New England and my father was from the South. In this bewilderment of origin and experience I can only put on an aspect of deep humility in any gathering of favorite sons and confess that I am nothing but an American.

"I lived a little while in Ohio and was very happy there, but obeying a call which seemed to me imperative, I went to Washington some twenty years ago. I might be pardoned for thinking I had not left Ohio, for every great department of national activity and power was under the direction of a citizen of that masterful State.

"The President was an Ohio man, equally distinguished in character and achievements; the finances of the country were in the strong and capable hands of John Sherman, the army gladly obeyed the orders of Tecumseh Sherman, with Phil Sheridan as second in command, while at the head of our august Supreme Court sat Chief Justice Waite: the purse, the sword and the scales of justice, all in the hands of men coming from a State which breeds men who know how to make war, to make money and to make laws."

THE MUNICIPAL CHARACTER AND ACHIEVEMENTS OF CHICAGO

THE FORWARD BOUND OF OPINION ON SOME GREAT ECONOMIC SUBJECTS—
DEMOCRATIC TO THE CORE—THE PRAIRIE OPEN-MINDEDNESS—COMMON-
PLACE ACHIEVEMENTS THAT SEEM REVOLUTIONARY IN THE EAST—THE
UPLIFTING POWER OF A FEW MEN—A RIGHTEOUS KIND OF TAMMANY—THE
MOST INTERESTING GREAT CITY IN THE WORLD IN ITS BOLD INNOVATIONS

BY

FREDERIC C. HOWE

Theories and plans for municipal reform fill volumes, but little has been written to show, in careful summary, what our great cities have recently done. What definite progress are they making in good government and in the building up of civic character? For a decade or more many thoughtful men and many earnest organizations have been at work. Some great problems have been solved in some cities; others in other cities; and others remain unsolved.

In this article and in several more that are to follow a first-hand, personal study of the achievements, the present condition, and the character of some of our principal municipalities is made in definite concrete terms. These articles are written to help to a clear understanding of what has been done toward the solution of the gravest problem in democratic government.

PARADOXICAL as it may seem, one can appreciate Chicago only after he has known the prairies of the far West. The straggling railway towns scattered here and there along the great trunk lines which enter the city are miniature Chicagos in the making. They are ragged, unkempt, uncared for and unadorned; an abiding place just beyond the homesteader's tent in permanency. The church and saloon have both come in, and the vigilance committee has vanished, but the rough-and-ready life is there. Of tradition there is none; of restraint, little. Of independence, vigor and self-confidence there is a surplus. Government is public opinion in process of formation. Improvements are emerging, but the prairie is just around the corner. And Chicago is a frontier town increased a thousand fold. This is the impression of the visitor. It is ultimately the belief of the resident. He may treat it as his home, and love it as his city, but at heart he is but one of two million and odd people whom necessity, choice or chance has cast into the community which the four quarters of the globe and the best portions of America have builded into a city.

Chicago is unfused. It has not yet found itself. Historically, it happened; as a matter of fact, it is still happening. It has many organizations, but little organized life. Sometime it will have such a life. Then it will be one of the greatest, possibly the greatest, of American cities.

Constructed on a rectangular plan, its business streets present in dreary succession sheer walls of brick and stone, irregular in height, size and appearance, unadorned and ugly. Here and there a building arises which suggests an architect rather than a contractor, but beauty, municipal beauty, Chicago cannot claim, save in palatial residences, splendid boulevards and magnificent parks. Street life is still the life of the frontier. Advertisements of every description offend the eye. The saloon, cheap restaurant and variety hall with garish signs of every conceivable nature decorate the faces of buildings, corners and other available space with announcements of their attractions. Certain streets suggest a Midway Plaisance to catch the thousands of fugitive transients who pass through the city or call it a home.

Under foot are badly built, badly engineered pavements and sidewalks. The streets are badly lighted and are a mass of mud in spring and fall, of dust and wind in summer and winter. Overhead is a murky sky and dingy side walls, and everywhere the din and roar of surface and overhead cars, vans and truck wagons, strike the ear. Noises of an indescribable municipal sort prevent conversation even if conversation were possible, for Chicago does not stop to talk on the streets. They are filled with eager, hurrying, crushing crowds rushing, jamming and seeking only to move on. The purpose of every one seems to be to get somewhere else. Life is movement

Kipling said Chicago reminded him of an Indian famine relief-distribution force at work.

Such is possibly an exaggerated picture of Chicago in its downtown regions. Every appearance seems to indicate inefficiency in public administration. The external evidences are all against good government. Nothing seems to be done as it should be done, and most things seem to be neglected altogether. But probably in no city in America are the seen and unseen forces more at variance. Chicago is essentially a new city. Its life is that of the keen, enterprising, rough-and-ready sort. It is eager. Conservatism has not had time to crystallize. A full life is offered to the last comer who has anything good to suggest. Its hospitality is of the open, tolerant sort. It holds no obligations to the past. It has its eye on the future. Life is always in today, not in yesterday. For effects it cares little, for immediate life everything, and for fundamental reality probably more than any other city in the world. Chicago is individualistic in the extreme in its methods, socialistic in its hopes and ambitions. Within twenty years it will probably surpass Glasgow, which it suggests in many respects, in municipal enterprise; and in half that time it will lead America in the ownership and operation of public utilities. In this respect, Chicago will break the way. As a force it will revolutionize America. Precedent, tradition, caste, the opinion of the club, church or the *status quo* count for little. No one speaks with authority, but an essential truth finds a ready response. The spirit of the city is one of buoyant, leaping self-confidence, knowing no obstacle and resolute in its purposes. And there is a vibrant note here. Chicago seems to trust the people. There is no fear of democracy. There is no hesitant doubt of the city's future.

And the city has an easy tolerance. Its ideals are economic and industrial rather than esthetic and refined. And there are many Chicagos. It is not metropolitan; it is cosmopolitan. There are 1,314,453 persons of foreign birth or foreign parentage living in the city. It is often said that Chicago has more Germans than any city in Germany, save two or three, and more Irish than any city save Dublin. A large percentage of the officials in the Mayor's cabinet and the council are of foreign birth, the Irish, German

and Bohemian races predominating. The city is Pan-European in its temperament and American to the core in its democracy. It is extravagant in its luxuries; it is degraded in its poverty. It employs thousands of children of school age in its factories and sweat-shops in defiance of law, and, like a sponge, sucks to itself the young men and women of the exuberant western prairies. It is the Mecca of the tramp and the criminal, who find access to it easy by the many railroads which converge in Chicago, and the public are an easy "graft" in their ready tolerance of the unsuccessful. Its tenements are crowded and squalid, and are in sight of spacious palace-like mansions occupying park-like grounds. Dignity has not yet come, and the judge of the court may be found at the ten-cent lunch counter, alongside of the professional juror. The inner sanctum of the great financier or the manager of the leading daily is as open to a humble depositor or subscriber as to the successful promoter or advertiser. A conservative journal may be edited by a philosophical socialist, and the inner advisers of the Mayor are likely to be men of the most radical views. Democracy is of the advanced sort, while conservative Republican leaders are hospitable to many principles essentially radical to the eastern mind.

Chicago is open-minded. Just as an esoteric Oriental will fill an auditorium in Boston, so a new political idea will pass sympathetically over the city like a prairie fire. While other communities wait for organization, Chicago accepts the man. In 1901 a bill "for the submission of questions of public policy" to the electors became a law of the State. It required a petition of twenty-five per cent. of the registered voters to have a public question presented at the polls. The Legislature thought this percentage would be prohibitive. And it would have been so in the average city. Not so in Chicago. There was a breezy wakefulness about the citizens which forced results with unexpected vigor.

A young lawyer, Daniel L. Cruise, of comparatively little prominence, who secured his legal education while serving as a mail clerk, in less than a year after the passage of the law forced the submission of three questions to the people of Chicago by the presentation of a petition bearing 109,000 signatures. These

questions and the votes thereon were as follows:

For ownership by the City of Chicago
of all street railroads within the corporate limits of said city.

For such ownership	142,826
Against	27,998

Majority almost five to one in favor 114,828

For ownership by the City of Chicago
of the gas and electric light plants, said
plants to furnish light, heat and power
for public and private use.

For such ownership	139,999
Against	21,364

Majority almost six to one in favor 118,635

For the nomination of all candidates
for city offices by direct vote of the
voters at Primary Elections to be held
for that purpose.

For direct primaries	140,860
Against	17,652

Majority almost eight to one in favor 123,208

To the surprise of all, both the friends and the foes of the referendum, the majority in favor of these questions was far heavier in the Republican wards than in the downtown districts, a refutation of the idea so prevalently advanced that municipal ownership is sought only by irresponsible and property-less classes.

Of a similar sort was the contest waged by two women school-teachers, Miss Margaret Haley and Miss Catherine Goggin, representing the Chicago Teachers' Federation. The school funds of Chicago were inadequate. Teachers were unpaid, and underpaid, were retired for a portion of the year and the schools closed. It was discovered that the law requiring the taxation of public service corporations at their franchise value was ignored by the taxing bodies. The teachers raised \$2,000 to contest the question. Mass meetings were held all over the city, able lawyers were engaged, mandamus proceedings were begun, and carried through one court after another until the Supreme Court issued a writ requiring the taxing authorities to place these properties upon the tax duplicate at their full market value. By this proceeding \$600,000 of back taxes was turned into the city treasury and an annual increase of \$1,000,000 made to the city revenue.

Such is the force of individual effort in Chicago. The citizen seems to believe in his own powers and sets out to achieve his

purposes without organization, whether it is in business, politics, philanthropy or reform. In 1893 a few men began an agitation for civil service reform. No more hopeless cause seemed conceivable. The two political parties were boss-ridden and seemed impregnable in their control of the city and the Legislature. Corruption, vice and spoils were in the ascendency. In 1895 one of the best civil service reform acts in America was passed at Springfield. It was achieved not by argument merely, but by careful business and campaign methods. Not only was local interest aroused, but Chicago manufacturers, jobbers and professional men distributed tens of thousands of printed letters and postals all over the State, to be sent by men to their Assemblymen, asking their support for the measure. Springfield was deluged with petitions, letters and postals. The Assembly was forced by the burden of the demand to ignore the party lash. They responded by passing the act as desired. For several years the measure received scant support from the local administration. The spoilsmen were too much for the Mayor, whose appointees to the commission "took the starch out of the act." Today all this is changed. Alert public opinion has forced the appointment of better commissioners and they in turn dignify the act in its administration. The result has been a reformed public service. A better class of men are seeking office. A higher morale characterizes public work. Enforced political assessments are at an end. No longer are pay-rolls padded at election time; independence and self-respect pervade the departments. The city hall machine, in so far as it is an official organization, is broken, and public office is becoming a public trust. Today even the elective officials indorse the law and encourage its honest demonstration.

Yet another instance of the force of personality. Six years ago Chicago was governed by the "Gray Wolves." The crooks had control of the City Council by a vote of about fifty-six to twelve. The office of alderman was rated as being worth \$50,000 a year. In 1896 John Maynard Harlan, son of Justice Harlan of the Supreme Court, with one or two other young men, entered the Council. He arrested public attention, called a crook a crook, and the corruptionist, whether rich or poor, by similar terms. He manufactured

headlines for the press. About the same time the Municipal Voters' League was formed by a few energetic men. Among them were Walter L. Fisher and Edwin Burritt Smith. The League solicited funds and began to issue bulletins on the eve of election, giving the voters full information as to candidates for the Council. The announcements went into the lives, characters and public records of the candidates.

At first the public received the announcements with indifference or suspicion. The politician treated the bulletins as a "kid-glove" effort of the "rayformer," who would soon tire of the business and return to his club. But the League stuck to its purpose. It secured headquarters. It employed secretaries and investigators. It elected some aldermen. Soon the public began to trust its statements. The press seconded its efforts, and the press of Chicago is independent and non-partisan in such matters. The politicians began to wonder. Soon the political leaders brought their candidates to the League for inspection before they announced their candidacy. Today the public awaits the League's announcements and follows its advice. A trained staff is constantly employed. The League is in politics to stay. It is the best organized machine in the city and has Tammanyized the honest and intelligent voter. It is the most effective organization of its kind in America. Its administration is centralized. It is quick and free from machinery. It has no axes to grind; no political purpose to advance. It is disinterested and inspired with a love for the city and decent government. It has 100,000 voters of the city classified and indexed, and has succeeded in electing fifty-five aldermen out of seventy, who are honest and competent. This majority controls the Council on a non-partisan basis. They are conscientious in their attention to public duties, and far and away the most efficient municipal assembly in America. For several years not a boodle ordinance has been passed by the Council.

But this giant of a city is bound, Gulliver-like, by the thongs of a State Constitution, adopted in 1872. Its hands and feet are tied. It has issued no bonds since the World's Fair. Its valuation for purposes of taxation is kept down to twenty per cent. of the true valuation. The assessment amounts to but

\$374,580,440. Its bond limit is but five per cent. of its valuation for purposes of taxation. As a result, the city is limited in its borrowing powers to one per cent. of the real value of property. Its indebtedness is lower today than it was thirty years ago when the population was but little more than 300,000 and the city had an area of but thirty-six square miles. Today, it covers one hundred and ninety-six square miles. The bonded debt is but \$19.42 per capita. It was \$46 per capita in 1871. The per capita debt of Boston is \$91.61 and of New York \$81.27. New York, with half the street mileage of Chicago, spends five times as much for their cleaning, while Boston, with one-seventh the mileage of Chicago, spends a much larger sum for this purpose. With the exception of the expenditure for police, fire and health, all departments of the city are on the same inadequate basis. The per capita revenue collected per annum is less than any other large city in America, with the exception of Cleveland and Indianapolis. It is but \$15.81 per capita as compared with \$45.37 per capita for Boston and \$30.35 for New York. The city cannot borrow any money for permanent improvements, however imperatively they may be needed, and is waiting release from the limitations imposed upon it by a country Legislature to take up plans for municipal betterment on an extended scale. Chicago needs a new charter. Were it freed from the Legislative restraint and given virtual home rule in its local affairs it would astonish the world.

Like many of our American cities, the charter under which the city operates is a historical survival. In the complexity of its machinery it suggests London. Until very recently, the rural township government existed side by side with the city government. In addition to this, there still exists a county administration under three commissioners, despite the fact that there are less than a hundred thousand people in Cook County outside the city limits. There are three separate Park Boards, two of which are appointed by the Governor and one by the Circuit Court. A sanitary sewer district has charge of the construction of the drainage canal. Altogether, the municipal functions of Chicago are divided up among eight different corporations, each of which maintains its own officers, levies its own taxes and

expends its own money without regard to that unity of action so necessary in efficient administration.

A magnificent park system has been developed under these boards, with forty-five miles of splendid boulevards connecting one part of the city with another. Certain streets have been developed into residence boulevards, and the parks themselves have been turned into veritable commons or playgrounds for the public. No "keep off the grass" signs depress the spirit of sport; an increasing interest is shown in the development of public baths and playgrounds. At present there are twenty-four playgrounds in use. Public-spirited citizens have taken up a project of unparalleled possibilities for the construction of a breakwater boulevard, extending from Jackson Park to the mouth of the river in the centre of the city.

The plan contemplates an esplanade or speedway 500 feet broad and from five to seven miles in length, constructed far out into the lake, and enclosing a lagoon for pleasure craft and sports between it and the shore. The estimated cost of this development is \$25,000,000. The plan is unique in America or anywhere else in the world, and will, if carried out, redeem the loss which Chicago has suffered from the occupation of the lake front by the railroads. A similar project has been discussed for the construction of abutting quays along the Chicago River, which could be used for business, promenade and architectural purposes, and which would convert that river, which now runs clear as the lake itself, into a stream attractive as the Seine at Paris, the Thames at London or the Oder at Berlin. These are Chicago dreams. But in this great western metropolis the dreams of today have a way of becoming realities tomorrow.

The responsible administrative agencies of the city are the Mayor and the City Council. While eastern cities, affrighted at the inefficiency and corruption of their representatives, have abandoned the democratic traditions of the past, and have lodged great power in the Executive and left the Council an anomalous, powerless survival, Chicago has retained the early type and reposes large powers in its aldermen. The City Council is a body of seventy members, two of whom are chosen from each ward. They receive a salary of \$1,500. The budget of the city is made up by the Finance Committee, subject, as is all

legislation, to the veto of the Mayor. Six years ago the City Council was a byword of reproach. Candidacy for membership in it was almost a confession of dishonesty. An aldermanic syndicate trafficked openly in all sorts of legislation. It granted franchises to itself under the guise of a dummy. These franchises were sold by the syndicate to the highest bidder or were used as "strikes" against the existing railroad companies. In 1896 the Council granted six franchises of immense value in utter disregard of public protest. Today but four of the old gang remain in the Council. The corruption born of public franchises and grants in the streets is at an end, and the public go to bed on Monday evening with reasonable assurance that nothing will be done by the Council seriously to imperil the city's interests. This has been largely achieved through the efforts of the Municipal Voters' League, and there seems to be no public sentiment demanding a substitution of larger executive responsibility for the distributed democratic powers which the Council now enjoys.

Still, the office of Mayor remains a dignified post. The Corporation Counsel, the Comptroller, the Commissioner of Public Works, the heads of the Fire and Police Departments are all executive appointees, as are the members of the Civil Service Commission, the members of the School Board, the Health Commissioner, the City Electrician, the Building Commissioner, and a number of other officials. Many of these officials are men of talent, with a full sense of official responsibility. The merit system has relieved the Mayor and his subordinates from the stress of the spoilsman, and has freed their hands for large public business.

In the one community in America where the spirit of the people, the conditions of trade, the topography of the city and the wide dispersion of population unite in demanding excellence and rapidity in local transportation, we find the worst of conditions. Aside from the suburban and elevated railroad traffic, the service is slow, inadequate and dilapidated. Cable, overhead electric and horse cars block the streets; the equipment is worn out; the cars dirty. This is explained by the companies on the ground that their franchises are about to expire, and that improvements cannot be made until this question is disposed of. And this is the

burning issue of municipal politics in Chicago. All others are subordinate to it. For the past half-dozen years the City Council, the Municipal Voters' League and the press have been studying the franchise question in a most intelligent manner. Many valuable reports have been published on the subject, and the present policy of the city seems to be one of no franchise extension until the city is empowered by the Legislature to own and operate the lines and no action under such power until the question has been submitted to a vote of the people for approval. Apparently, the preponderance of opinion is in favor of public ownership, if the referendum vote of last year is any index of public opinion.

But the city's financial condition would seem to preclude such action now, and the present purpose of the city seems to be in the direction of a short franchise, with full return to the city in the form of low fares or a tax upon gross receipts, and better service, with an underground subway system through the business districts to relieve the congestion of traffic. This, with full public accounting, and the right of the city to acquire and operate the roads at any time, seems to be the programme of the administration. And no city in America has proceeded with more intelligence in the treatment of this great question than has Chicago, and there are many who predict an early ownership of the entire transportation system by the municipality.

The friends of municipal ownership insist that the question is no longer a speculative or experimental one with Chicago. They say it is foolish to contend that the city cannot successfully operate its own street railways. They point to the water and electric lighting plants for verification. The former system is a most extensive one, the supply of water being obtained from Lake Michigan through immense submarine tunnels, constructed by the city under the bottom of the lake, to intake cribs some miles from the shore. The plant has been in the hands of the city since 1854, when it was purchased from a private corporation. The cost, without allowance for depreciation, has been more than \$34,000,000. Its present bonded indebtedness is \$4,000,000. The gross earnings for the fiscal year ending December 31, 1901, were \$3,504,457, while the net earnings to the city, after all expenses for operation, maintenance and interest are deducted, were more than \$1,250,000.

Chicago also lights its own streets by electricity. It claims to do this for \$57.48 a light, which figure, however, does not include loss of taxes, interest on investment and some other charges. The plant is free from indebtedness, having been built from the proceeds of taxes levied for that purpose. The property of the department is valued at \$1,300,000, and is ably conducted under the merit system.

Two other enterprises of tremendous magnitude merit notice. One of these is the construction of the Chicago drainage canal at a cost of nearly \$40,000,000. This great project, which covered a quarter of a century of agitation and work, has finally been completed except as to a portion of the intercepted sewer system. By this system all the sewage of the city will be dumped into the canal, the river's flow will be reversed, and Lake Michigan will be utilized as a great natural flushing tank, carrying the sewage into the Mississippi River. This will prevent the pollution of the water supply of the city, will cleanse the Chicago River, and will ultimately render serviceable immense water-power for public uses. When this is finished the water supply of the city will be as free from impurities as the lake itself. Already the Chicago River has become a clean flowing stream instead of the vilest of sewers, to the great comfort and growing health of the city.

In addition to this, the city has gradually brought about the abolition of the railroad grade-crossing. In 1892 355 deaths, or twenty-three per cent. of those from accident in the city, were caused by the railroads. In 1901 the number of deaths had been diminished to 241, or fourteen per cent. of the accident cases. Hundreds of miles of tracks have been elevated above grade by ordinances of the Council. This has been done without cost to the city, the expense being borne by the railroads themselves. The tracks are unsightly, it is true, and it is possible that future years may cause the community to regret that they did not require the tracks to be placed below grade rather than above; but it is a remarkable achievement in the face of the obstacles which the railroads usually interpose to such legislation.

The problem which is the most serious one in New York—*i. e.*, the relation of the public and the police toward vice, the saloon and gambling—is also a problem in Chicago. But it is solved on the frontier principle. The

easy tolerance of another man's habits which marks the West characterizes the city administration so far as it relates to these questions. For Chicago is a "wide open" town. The saloon closes when the last customer departs. Sunday differs from the other days of the week only by the volume of business done. The theatre, the variety show and other forms of public recreation flourish on the first day of the week as they do on the seventh. And there seems to be no general demand for a severe enforcement of the Sunday-closing laws. At least, this question does not present itself as a political issue; and the public, whether moved by indifference to such matters or a desire for the utmost freedom, raises no organized protest against the continuance of these conditions.

The police force of the city has been subjected to severe arraignment in the past. The various forms of vice and gambling were said to be subject to police tribute and blackmail. There is reason to believe that there has been considerable improvement in this regard in late years, but the street evidences indicate a widespread prevalence of vice and crime in striking contrast to some eastern cities. Part of this is due to the fact that Chicago receives at one time or another the flotsam and jetsam of the whole country. Moreover, it is the trading centre of the West, and the drovers, ranchmen and miners look upon it as their eastern rendezvous. The lack of fixity in employment, the immense foreign population, the railway terminals which dump the criminal and the tramp into the city's population, all contribute to this condition. The morale of the police force is not of the highest, nor the protection to life and limb of the best. Chicago does not seem to get her money's worth from her police force, and it is probable that this department of public service will respond to better conditions only with a change in public sentiment toward law and order.

Any intelligent opinion of the administration of Chicago must have in mind many things not visible on the surface.

The large western cities, especially those whose growth has been rapid, are burdened with many things to be done, with few people to do them. They have no accumulated experience to draw upon, and are like the western farmer who can find no time to paint his house because he must first get in his crops.

Moreover, Chicago's financial resources are inadequate, and apparently there is no means of relief save through a State constitutional convention. Her temper is easy and tolerant of vice and even of lawlessness. The political machine and the party boss are still formidable, though they are held in check by a steadily increasing independent vote which esteems the city above party. The dignity of public office is increasing and the City Council is coming to be looked upon as a door for higher political preferment. Partisanship and favoritism play a large part in local matters, but bribery and direct corruption are practically at an end. The merit system is well administered, and economy is enforced by the financial limitations of the city as well as by a recent investigation made by a firm of expert public accountants, who have reorganized and placed the departments on a strict business basis and have rendered possible a great reduction in the working force and a consequent saving of nearly \$100,000 to the city in salaries.

The one fundamental need of Chicago is to be free from the limitations placed upon her by the State constitution, free from the ignorant control of an indifferent State Legislature, free to put the tremendous powers lying more or less dormant in her life or absorbed in commercial pursuits, to work on her upbuilding. A city that can do the things she has done in the face of the obstacles that have been overcome can be trusted to do anything. Chicago is a giant manacled and fettered by a rural community inspired by fear and ignorance. The State will not unloose the chains, partly because of the corrupt spoils which come from local legislation, partly because partisan leaders and franchise owners fear the city will put an end to their sinister purposes.

But endow Chicago with home rule, give her such powers as she sees fit to exercise, and she will advance by leaps and bounds; her civil development will equal her wonderful commercial expansion; for no city in America is more ambitious, none is freer from obstructive conservatism, and none can claim more distinguished contributions to the power of the American people to abolish abuses and reestablish local self-government on an enduring foundation. And this is a city which six years ago was a reproach to her citizens and a byword of corruption to the nation.

WIDENING THE USE OF PUBLIC SCHOOLHOUSES

HOW THE EXPERIMENT SUCCEEDED IN BOSTON OF OPENING THEM ALL DAY AND ALL THE YEAR—INDUSTRIAL CLASSES, PLAYGROUND FACILITIES AND BATHS—APPLYING THE SYSTEM IN CONGESTED DISTRICTS—THE COST AND THE REAL SAVING

BY

SYLVESTER BAXTER

WHEN the public pays for schools, it pays for institutions in the form of grounds and buildings that lie, as a rule, in profitless idleness eighteen hours out of every twenty-four. During those eighteen hours they are fenced-in bug-bears, in cities at all events, shunned by the children for whom they have been erected, a waste of investment that private capital would not tolerate for a moment.

Boston not long ago awoke to this anomaly through the influence of Mr. J. J. Storrow, a prominent young lawyer and a member of the Public-School Association—a non-partisan organization which is bringing new vitality into the city's school system. It was found that the city's educational plant, which cost \$13,110,700, was being used only five hours a day for about two hundred days in the year—only about a quarter of the possible working time. A special committee, accordingly, made a start toward greater economy by experimenting with longer hours of use for two selected schools, with the hope of extending the system later to others. The Hancock school at the North End, where the foreigners live and where the great majority of the children leave school at the age of fourteen, was chosen because Headmaster Dutton had already opened several of his schoolrooms in the evening and allowed his pupils to read and study in them. The Lowell school in the suburb of Roxbury, in an entirely different sort of neighborhood, was the second school chosen. The work was not regular evening school work, but what might be called "public-school extension." Evening classes were given in cooking, dressmaking, millinery, drawing, gymnastics and other studies. In the summer the schoolyards were turned into

playgrounds and the buildings opened as industrial schools. These activities kept the schools in use the year round.

At the North End school the yard with its swings and tilts and sand-courts, and the building with its classes in domestic science, basket-making, sewing, drawing and color-work, embroidery, music, reading and games, teemed with life. There was a kindergarten of one hundred and fifty children, a reading-room furnished by the Boston Public Library, and in the neighboring Paul Revere school a bathing establishment that served two hundred persons a day. Did the children appreciate these privileges? The average attendance in the yard of the Hancock school was two hundred and fifty in the morning and three hundred and fifty in the afternoon; and, as only young children were admitted, it was not uncommon to see a ten-year-old youngster borrowing a baby to take care of in order to gain admittance. In addition to the opportunities given at the schoolgrounds, moreover, there were field-work and nature-study classes which brought the children out of the city to the parks, the woods and the seashore. As a rule, these children paid their own fare—ten cents.

Mr. Storrow tells of a visit he made to the Hancock school one winter night. "I stood outside the schoolhouse in the crowded North End street. Not a single room was dark. The building looked like a great factory. Within we saw young women learning to make dresses and trim hats and cook. At the top of the building I saw a circle of boys gathered around the master, who was teaching them to play the violin. In some rooms foreigners were learning English, repeating sentence after sentence as each fell

from the lips of the teacher. Altogether, I suppose there were twenty rooms in use."

The experimental work was so successful that the idea has been applied to other schoolhouses in other sections of the city, and it is proposed to extend it until all demands are met. The scope of the evening drawing-schools has been considerably enlarged. Opportunities for training in the fine arts, as well as in mechanical drawing, are increased, and free instruction in drawing from life-models is given. It is particularly desired to make wider use of the magnificent plant of the Mechanic-Arts High School, with its fine facilities for manual training and technical instruction, by duplicating its day work with evening courses that would open its opportunities to hundreds who would profit by them immensely, but who are now barred by the necessity of earning a livelihood. Such gratifying results have come from the playground use of the Hancock schoolhouse yard that it is now proposed to throw open the yards of eight schoolhouses in various congested districts. The idea is to have no supervision beyond what the schoolhouse janitor may casually exert. The children will be left to their own devices. There may be some broken windows now and then, but it is felt that no particular harm will be done if these are not too numerous.

Stress is laid upon making the schoolhouse of all possible service to the public, even giving it the character of a sort of free neighborhood clubhouse. At a crowded public meeting on the subject held at the Lowell school, Mr. Storrow said that the committee wanted to keep the schoolhouses open not merely for intellectual work, but for anything that will tend to make our homes more attractive and comfortable and our lives pleasanter. "Come here and learn how to make dresses, to cook, or sew. Moreover, do not always come here for the sake of work. Get used to using the schoolhouse for having a good time; have a dance here in the hall once a week, if you can. Meet here to discuss neighborhood matters. In short, we are anxious to have you wear out the threshold of this schoolhouse for any purpose that will make life pleasanter, happier, and more worth the living."

The direct economy effected is something extraordinary. In the summer work at the Hancock school the expense of the playground, including the entire cost of equipment, was only \$1.25 for each child. The expense of the industrial and kindergarten departments for the same period was only \$2.25 a pupil. With the entire cost of the public schools amounting to an average of say something near \$30 for each pupil, the additional cost entailed under the extension system makes an average of but a few dollars for each pupil thus served—say \$7 or so. With these additional pupils included in the total attendance the average cost for each pupil is brought down very considerably, to say nothing of the benefits to those who use the schoolhouses for social and recreative purposes, such as the occasional free concerts under the auspices of the Music Commission of the city. Another development likely to come is their use for courses of free lectures, as in the public-school extension in New York City. The extension of these additional features is trifling in comparison with the total cost of running the schools, particularly in view of the benefits derived. The "plant" itself remains the same, and requires no enlargement for the purpose. Therefore, there is no increase in interest and sinking-fund requirements. The wear and tear is somewhat greater, meaning a slight addition for repairs and perhaps for depreciation. The main item of additional cost, however, is in operating expenses, comprising principally the increased charges for heating and lighting, the expense for the additional staff for instruction, and the cost of material used—the Massachusetts plan of free text-books including also papers, pens and pencils and drawing materials. Some charge, for the sake of exactness, should also be made for the additional cost to other departments of the city that take part in the work, like the Public Library and the music department.

President Eliot of Harvard University has said: "There is no such waste of a plant as to shut it up and not use it." The recognition of this fact in educational economics is certain to assure an immense advance in the character of the American people wherever the principle is practically applied.

WHY SHAKSPERE IS NOT UNDERSTOOD

OUR GREATEST LITERATURE NEGLECTED BECAUSE OF ITS UNINTELLIGIBILITY—CHANGES IN THE ENGLISH LANGUAGE TO WHICH THE OBSCURITY IS DUE—THE EXPLANATION OF MODERN SCHOLARSHIP

THERE is a Judge in a certain western town whose habit it has been for many years to read a play of Shakspeare's to his family every Saturday evening. The town is a university centre and above the average in culture, but the Judge's practice causes comment because even there, as everywhere else, the latest novel is far more likely to be the food of everyday reading than Shakspeare; for Shakspeare in the ordinary American home is used chiefly to fill book-shelf space. Why? Take down a play, even one you read at school, and read to see if you comprehend the tongue in which Shakspeare wrote. Time has so changed idiom, the meaning of words and the manner of English thought, that what was as clear to Elizabethan theatregoers as Pinero's dramas to an audience of today is fogged for modern readers with baffling unintelligibility. Thus, lurking in the mind of the ordinary reader, even one who feels the mighty power of Shakspeare's literature, is a haunting subconsciousness that Shakspeare is "hard reading." The reader has a little of the feeling he has toward Chaucer. Some will deny it, but let those who do take down a play and try to understand a single scene, as Shaksperian audiences understood it. It is a pretty tale. This, after all, is why the greatest literature of any language is neglected for fustian stuff, or, if not that, for an unvaried consumption of second, or third, or fourth, or fifth-rate books. Even those who do read Shakspeare—consider—if this be not true—

"Aim at it
And botch the words up fit to their own
thoughts."

We read about Shakspeare, listen to lectures about Shakspeare, talk about Shakspeare, quote Shakspeare; but not one in ten thousand of us can really read common passages of Shakspeare intelligently. We patch out a lame sense from his words to fit our own notions of what their meanings ought

to be. Thus, like poor Ophelia, we make our Shakspeare speak things of doubtful import that carry but half a sense. His fine speech is really nothing—empty sound; though our crude rendering of it leads us to fine and stirring inferences, we only aim at his thought; we do not hit in the gold. We guess that there must be a fineness in the lines since they suggest fine emotions; but there is nothing sure in our reading and much that is unhappy.

Take for example the following lines from the second scene of the first act of "Macbeth," where their Norwegian allies turned on the Scots and aided Macdonwald's rebels:

Soldier:—As whence the sunne 'gins his reflection
Shipwracking storms and direful thunders
So from that spring, whence comfort seem'd to come
Discomfort swells.

Some editors interpolate a "break" at the end of the second line, but does even that give the passage clear-cut signification, even if the editors were warranted in rewriting what Shakspeare wrote? The sun does not reflect its light, nor is it clear from the lines as written what the storms and thunders do. "Comfort" could hardly come from a spring—and why "seem'd to come"?—and the sun could hardly be a "spring." "Discomfort" seems a sapless word to apply to a hostile onslaught of quondam friends. What other impression, then, is given an unscholarly reader than that Shakspeare used a surprising number of bombastic words to say that the Norwegian action made the Scots uncomfortable, that the passage not only falls short of great literature, but is even inept?

This vague, awkward and clumsy English, however, is only vague, awkward and clumsy because we try to read it without knowing the idiom of the time when it was written—the ordinary, current, everyday speech of Elizabethan England. If we read Shakspeare with a knowledge of this language his works are a different book—indeed, the greatest and finest literature ever penned.

compared even with Homer, or Virgil, Euripides, or Horace.

"Gins" in Middle English and early New English is a common form of the word which is now "begins," and not an arbitrary poetic license; "his" is the regular form of "its" in Shakspeare's time; "reflection" was in common, everyday use for direct, as well as indirect, shining when this passage was written; the verb of motion, when it could easily be supplied from the context, was omitted in Middle English and early New English idiom, and the passage needs no "breaks" or "comes" or "bursts" or "swells" to make clear sense. "Spring" meant "source" in Shakspeare's time, and was applied to the sun, which was the "source of the day,"—we still have it in our poetic "day-spring"—i.e., dawning. "Comfort" in the sixteenth and seventeenth centuries was the regular word for "succor," "aid"—we still say, "give comfort to the enemy." "Seem'd to come" in Elizabethan English is a frequent idiom for "was on the point of coming," "was just coming." "Discomfort," as the Oxford Dictionary shows, was a common word for "disaster" in the seventeenth century, quite intelligible to Shakspeare's audience and perfectly fitting to the thought. Every one of the words noted in these few lines, save "gins," is in common use today; but each has so changed its meaning between Shakspeare's time and ours that the context is dull and colorless, the notions vague and confused, and the sense unintelligible if we apply to it any standard of unscholarly criticism.

To go further, one reads in the second scene of the fifth act of Macbeth:

He cannot buckle his distemper'd cause
Within the belt of rule

As enemies are gathering thick about Macbeth at this stage in the drama, any modern reader would naturally assume that "cause" is simply the modern "cause," but in Elizabethan English the word means "disease," and the passage in reality refers to Macbeth's growing madness. "Naught that I am" looks simple, but who would be aware that Shakspeare meant "Wicked that I am?" or who would understand from "I cannot taint with fear" that "taint" means "wither"? The three words, through changes of meaning, no longer convey what Shakspeare meant.

Again Macbeth soliloquizes in the third scene of Act V.:

Seyton! I am sick at heart,
When I behold—Seyton, I say!—This push
Will chere me ever, or dissect me now.
I have lived long enough; my way of life
Is fall'n into the sere, the yellow leaf,
And that which should accompany old age,
As honor, love, obedience, troops of friends,
I must not look to have; but in their stead,
Curses not loud but deep, mouth honor, breath
Which the poor heart would fain deny and dare not

This passage contains two phrases that have passed into current speech, but it is safe to say that the sentence following the daft king's second agitated call to Seyton is misread a thousand times to once that it is understood as meaning, "This contest will chair, or enthrone me permanently, or overthrow me now." A favorite passage from Macbeth is the well-known apostrophe to sleep, which contains the line "Sleep that knits up the ravell'd sleeve of care." It requires knowledge of Elizabethan English to be aware that "knit" means simply "gather together," and that "sleeve" is not "sleeve," but a bunch of loose material like flax or silk fibers ready for spinning. With this knowledge, the signification of the passage is far from that which the ordinary reader gives it.

Macbeth speaks of "the disposition that I owe"; he means "possess." Earlier in the play Lady Macbeth says—cold-bloodedly—of Banquo and Fleance, "In them Nature's coppie is not eterne," employing the Elizabethan legal term "copy" to say "In them Life's tenure is not eternal." For another example one reads in the First Folio, the first collected edition of Shakspeare's plays:

How say'st thou, that Macduff denies his person
At our great bidding?

This is after the banquet, at which Banquo's ghost appears, when Macbeth and his queen are discussing the events of the evening. Attempts have been made by editors through the use of unwarranted punctuation to make this read, "How say'st thou? That Macduff denies his person at our great bidding?" but as Lady Macbeth has said nothing of the kind, such endeavors have left the line as hazy as they found it. Yet it was common idiom to Shakspeare's contemporaries to say "How say'st thou that" for "What do you say to the fact that," a rendering that makes the puzzling passage crystal clear.

These illustrations have been chosen at random from a single play to show a reason why Shakspeare's dramas are not so often common reading matter for unscholarly book-lovers as their quality makes them pre-eminently fit to be, and to hint that a little self-examination on the part of those who do read Shakspeare will prove that the abrupt assertion that Shakspeare is practically unintelligible to modern minds is not so radical as it seems offhand. For it is plain that if a word or an idiom had one meaning to Elizabethan England and has another to the English-speaking world of today, to gain modern meanings from these metamorphosed forms of speech is to comprehend awry, which is tantamount to not comprehending at all. Those editors who have changed the Elizabethan spelling, for example substituting "cheer" for "chere" in the passage quoted above, as in the Cambridge text, have not merely failed to help modern readers out of the slough of misunderstanding—they have plunged them deeper in.

Chaucer's poetry and Spenser's is frankly recognized as being written in a tongue that is not ours; explanations and glossaries are required to understand it. Through an unwarranted assurance it has been widely taken for granted that with Shakspeare the case is different—that his tongue is ours. It is not. It requires translation as Chaucer and Spenser require translation. Take down your text of Shakspeare and see if that fact is indicated, or if the editor has given you any clue to the dramatist's meaning. See if there are not lines on every page which your education, which, perhaps, has taught you to understand Virgil and Homer, has failed to teach you to understand. Not one man in twenty thousand can read Shakspeare intelligently, and it is unfortunately probable that not one in a thousand is aware that he cannot read Shakspeare intelligently.

In addition, moreover, to this veil of haziness wrought by the change in language, there are other results that cast a blight on Shakspeare's glory. Pregnant lines are taken for bombast. Apparent slips in art or in sense are frequent; stupid editors have been fond of appending to lines they did not understand, "Here Shakspeare nodded," whereas Shakspeare did not nod at all. Again and again words are met that, pronounced in modern

fashion, destroy the rhythm of the verse. If one read in Macbeth, for example,

"When I came hither to transport the tidings
Which I have heavily borne, there came a rumor
Of many worthy fellows that were out."

the second line seems crude; or if one read in "Henry IV.," Part I, in Hotspur's speech to the King,

"When I was dry with rage and extreme toil"

one has to wrench the words to make melody. It would seem either that "Shakspeare nodded," or that he took poetic license. But "heav'ly" was Elizabethan pronunciation, and so was "ex-treme": Shakspeare wrote here the common locutions of his time. Stories and legends and superstitions and beliefs, now forgotten, were current in Elizabethan England that gave Shaksperian passages a point that modern readers quite miss, and so fail to find the matchless gold the verses really contain. So runs the tale. We are taught to read great works in foreign tongues—that is part of a liberal education—but Shakspeare, greater than the others, nearer at hand, and a part of the stuff of our intellectuality, is neglected or "botched up fit to our own thoughts."

"Appreciative" criticism is naturally unable to furnish guides and fingerposts to intelligibility, and many an editor has lamentably failed to point aright. Some, indeed, have even confused what they tried to make clear. Readers have accordingly been content either to skip what they could not understand or to guess at it and read on, with associations in mind that Shakspeare and his contemporaries could not have dreamed of. Well-informed persons, moreover, have been led to believe that, in order to heighten the effect of his finer passages, Shakspeare deliberately wrote the less brilliant ones more crudely. These cruder passages, of course, are merely those which the ordinary reader is unable readily to translate into meanings clear to his modern mind.

With modern scientific scholarship equipped by recent research to tell us to the full just what Shakspeare conveys—beginning, indeed, to give us Shakspeare's Shakspeare without slips and errors and nods and stupid transliterations and respellings—the opening of a new century should give us a Shakspeare revival in America as enthusiastic as that in the early part of the last century in England.



THE ADVANCING AUTOMOBILE

THE progressive march of the automobile impresses itself upon us only when some new and surprising truck or carriage passes in the street. The excitement of the innovation is gone, and the machines are so common that they go by unnoticed. Few people realize the vast number of automobiles of all kinds that are being put together in a hundred factories or the immense usefulness they have already served. They are drawing nearly everything that horses used to draw. They are operating great agricultural machines on the prairies and delivering mountains of merchandise in the city streets. They are being tried already along western roadways in opposition to trolley lines, which can travel only on one beaten track. They are, in every new office they have assumed, swifter, safer and cleaner than the things they have superseded. Looking into the future, prophets are seeing individual machines, possible to the rich and poor alike, solving many transportation problems. They are the crowning achievement of a preëminently mechanical age.

Many of the late details of automobile development are interesting. The light buggy, for example, unfitted for bad weather and bad roads, uncomfortable at its best and adapted only to low speeds and limited mileage, has lost favor as a model. In their place are massive *tonneau* machines. The "railway car" is the new model, with its standards of comfort and convenience, if not of speed.

When one sets out on a two-hundred-mile ride between breakfast and sunset, no fifty-mile vehicle will give satisfaction. Instead of flimsy running-gears, we have a steel frame borne on artillery wheels and heavy springs, with long wheel-base and easy-riding qualities. Upon this is an aluminum body, capacious, splendidly upholstered—as comfortable and complete as a parlor car. The *tonneau* has become popular partly because of its wide rear seat set well back from the other and enough higher to overlook it.

One of the indications of a tendency toward practical usefulness rather than mere

sport is the number of carriages fitted with canopy tops, storm curtains and removable plate glass fronts. Hitherto every summer shower, however light, has meant a drenching, and only the automobilist can fully realize the value of this new feature. Automobile cabs, fire apparatus, ambulances and trucks are becoming almost commonplace in many cities, and each of these machines displaces several horses. There would seem to be no service the horse has rendered which cannot be done, and better done, by a machine. The motor delivery wagon and van for freight transfer, along with the electric cab, are in straightforward competition with the older vehicles. They pay, and that is the test which determines their fitness.

During the past year steam and electricity have given way in great measure to the less reliable but more convenient gasoline motor. This has been improved in many important particulars, such as sparking and gear-changing-devices, and there has been a marked preference shown for greater power. Twenty horse-power is neither very high nor very low this year. France has passed through a similar enthusiasm for the high-powered internal-combustion engine, but the French are now beginning to return to steam. Its flexibility is a strong argument in its favor and its faults have been overcome to a surprising degree. Electricity still has no improvement to offer upon the old lead cell, Edison's nickel-iron cell being several months in the future.

A novelty which is still untried but which promises much in theory and may prove revolutionary is the new gasoline-electric machine. It should combine every advantage of economy, endurance, ease of control, reserve power for hill-climbing, and the other things which either alone possesses—provided some unforeseen fault does not counteract all its virtues.

Although the competition is so sharp that firms have failed in the past twelve months, there is no break in prices. Five hundred dollars is the minimum, about one thousand the price of thorough efficiency, and several

thousand the price of luxurious completeness. The poor man's automobile has yet to be made. The many-cylindred high-power gasoline engine is hopelessly costly to build and requires the services of a skilled mechanic. While it is the prevailing type of motor the automobile must continue a rich man's machine. Meanwhile it has made steady progress toward efficiency, simplicity, and the development of a prevailing type—which must precede its universal acceptance.

The horse is rapidly losing ground in our cities and every summer motor vehicles go out into the country districts. The movement for good roads, started by the bicycle, is now being hurried on by the owners of automobiles. The "scorcher" of bicycle days will soon tire of his racing automobile, already the horses on our roads are ceasing to fear the monster, and public interest is proved by the already large sales this season. The time of considering automobiles as expensive and novel toys for amusement has passed long since, and the measure of its possibilities for usefulness is so great that the widest play of the imagination suggests nothing that seems impracticable.

THE DIFFERENCE BETWEEN AMERICAN AND EUROPEAN PLOWS

THE American plow, simple-looking tool as it is, is a fine type of industrial art. The handles, beam, share, mold-board, land-side, colter and frog fit together at various angles. Its curved parts are as graceful as a pigeon's wing. The mold-board of the common American plow is cut from sheet-steel made by a union of three plies. The back is ordinary sheet-steel, the middle ply is tough and gives the mold-board strength; the front is tempered so hard in a red-hot bath that a file will not cut it. This plow-bottom is ground with an emery wheel and polished on a grindstone until the turning surface is smooth as glass. Its bolt-heads fit with such nicety that it is almost impossible to find them with the naked eye. The plow is so carefully adjusted that if it is thrown over while running it will right itself. There isn't an unnecessary pound of wood or iron about it. Even the clevis-pin is tempered to reduce its size. With this American tool an eighteen-year-old boy can turn over three acres of ground a day. But the French farmer looks with suspicion upon an American plow. So does the German, and the Englishman, and the Belgian.

A common French plow is so different from the American pattern that not one-half our prairie farmers could use it without instruc-

tion. It has no handles. It has a truck but no seat. It has two shares, two skim-colters and two knife-colters. In short, there are two plows, one in the air, one in the ground, concave to each other. All the parts are heavy. It cuts a deep, narrow furrow, and the skilled plowmaker discerns at once that it leaves the ground in ridges. This plow is made in sizes—one for a small horse or a small ox, another for a horse or an ox, another for two small horses or two small oxen. There is still another for two horses or two oxen, and so on up to six horses or six oxen. The two-horse plow retails at \$50. The maker of this French tool maintains that it is forged by hand and that it is much stronger than the American make.

NATIONAL PECULIARITIES IN AGRICULTURE

PERHAPS the most interesting implement used by French plowmen is the *bascule*. This plow is sometimes eighteen feet long and of sufficient strength to cut a furrow thirty inches deep. It is used in plowing for vines and in cutting drains. It is used occasionally also by hop-farmers, potato-growers and gardeners. Near Paris are municipal gardens fertilized with the city sewage, and these gardens are periodically plowed with the *bascule*. One purpose of plowing is to let air into the soil, hence the deeper the ground is worked the more air it will contain. French farmers, therefore, sometimes attach a hook to their stirring plows which acts effectively as a sub-soiler.

In many European countries the soil becomes very hard. Fields newly plowed have at times lumps a foot thick that can hardly be crushed with the heel. For this reason plows scour easily, but they are held to their course with difficulty. The clods are finally reduced by rains, and when sowing time comes the fields lie in loose ridges. These ridges are easily broken down with a cultivator and converted into a seed-bed. The man who owns a small farm in France cannot afford to have it cut up with dead furrows or checkered with back-furrows. To avoid this the French plow is made double. This plow is composite, being a right and a left or a reversible tool, and the team goes back and forth on the same side of the unplowed ground. The field is finished with only one back-furrow and a finish-furrow at the hedge.

French plow-horses are stallions and are hitched tandem. It is not uncommon to see three men and three horses work one plow. One man drives, another manages the plow, while a third follows with a spade to dig up the "cuts and covers." This crew may plow

a full acre a day. The American plow is evidently not adapted to French custom. If it were, our exports of plows to that country would soon reach prodigious invoices.

The French peasant loves his home farm. He seldom migrates. The corners of his farm are not right angles. He does not work to a line, like the American. He inherits a taste for the haphazard, the picturesque, and he delights in a free-hand way of doing things. He cultivates the eye. This makes him an artist. For centuries poets and painters have celebrated the grotesque beauty of rural France. Libraries and galleries everywhere abound with these works. But not one of them attracts more attention than Rosa Bonheur's old-time plowing scene in Nivernais.

In the valley of the Guadalquivir a traveler may still see a type of the primitive plow of Asia. In the old days it was made of a crotchet. Nowadays it is made of two crotchets; one is shod with a chisel of iron for the plow; the other is bound in rawhide for the handles. Bullocks are yoked to the implement. In many parts of Europe oxen are broken to draw from the horns, but these Spanish and Portuguese cattle generally draw from the neck, to which a yoke is fitted with bows. These yokes are sometimes twenty inches high and only two or three inches thick. The broad surfaces are not infrequently hand-carved in designs. There may be vines and clusters of grapes and growing corn and the bearded heads of wheat. Sometimes these decorations are inspired by religious subjects. The comfort and capacity of the ox are sacrificed to satisfy the artistic taste of the peasant. And this makes it difficult, as one might imagine, to sell many American plows in Spain.

In Germany the plow is nearly always geared to a truck. It is heavy and awkward but strong. Steers and cows are not infrequently used for power. The work is done slowly, but it is done well. In Switzerland it is not unusual to see a cast-iron plow made reversible similar to the "side-hill" tool of West Virginia. There is little difference between the English and German plow, except that the rod-breaker is common in the former country. The Asiatic plow is still very primitive. German manufacturers have studied these conditions and are selling large shipments in Russia, Siberia and Siam. They retail a plow in Odessa for \$5.

Professor Patrick Geddis, of Edinburgh, once said that it is easy to tell the character of a people by the character of their plows. The Chinaman stirs the soil for his rice-paddy with a stick and covers the seed with his foot.

The American breaks up his ground with three horses and plants his cornfield with two horses. The stature of the Chinaman is four feet, that of the American is six feet. Except in a small Manchurian territory about Harbin, where a small group of modern grist-mills has been built, Chinese farmers can hardly be induced to try an American plow. It is said that English plow samples have lain in Mongolia untouched for twenty years. At home the manufacturer fashions his goods to suit the taste of his customers. The commercial traveler calls upon the trade who want his goods; the retailer stocks with what his customers want rather than with what they ought to have. Foreign trade is conducted after the same plan.

MEETING THE FOREIGN DEMAND

A FRENCH mowing scythe is only about twenty-eight inches long. It is seven inches wide at the heel and broadly curves along the edge to the point. This scythe is hung to a straight bar with a single handle—that for the right hand. This handle is a post set in the bar from which a straight arm extends; from this arm a second post rises. The mower wears a belt to the front of which a cow's horn hangs. This holds a whetstone. When this rustic's scythe is dull he falls on his right knee, places the bar over his shoulder, with the point of the scythe in the ground, and whets the blade. He may even hammer it on an anvil anchored to a stump or a stone. This mower will cut one-half acre of grass a day and the stubble will look as though it were done with a lawn-machine. The English mowing scythe is similar to the French, only not so grotesque.

Notwithstanding the skill of the French scythe-man, our export of hay-making machinery is very large. The foreign agent of a Chicago company asserts that his firm sells more than twenty thousand reapers and mowers and self-binders in Europe annually. Our reaper firms have adapted their goods to the foreign habit. Many American one-horse mowers with thirty-six-inch sickles are used in England, Scotland, France, Germany, Austria, Russia, Belgium and Hungary. These machines have opened the way to other and commoner American patterns. They compete with domestic and Canadian goods, and their superiority is seldom questioned.

It is sometimes said that American goods are sold abroad more cheaply than they are at home. Yet American self-binders that retail for \$125 in Iowa cost \$225 in Hungary. Nor is inferior machinery commonly sold

abroad. There is an American firm engaged in manufacturing sewing-machines with branch shops in Scotland. Not infrequently customers on the Continent insist upon having machines imported across the ocean; but whether made by Scot or Yankee there is no difference between the price of these goods of the same grade. A cheaper grade, however, is made in Scotland to supply a cheaper demand. These machinery firms began by making what the Europeans wanted; now the European wants what the American makes. And that is the natural result.

A Scotchman named Bell invented the first reaping machine which employed the principle of a vibrating sickle. Laborers became apprehensive that the device would lessen the demand for their service. Accordingly they held an indignation meeting and proceeded to destroy the Bell machine with stones and sledges. In less than five years from that time the same principle was applied in this country, and today Scotch farmers buy their best reapers and mowers in the United States. But Bell's machine was made to turn to the right instead of to the left, so that all our reaping goods shipped to that country must be made to traverse the field in a way reverse to the old American custom. The foreign habit has so impressed itself upon the manufacturers, however, that they now supply their American trade with many machines which turn to the right.

FACTS OF OUR TRADE WITH EUROPE

GOOSE-QUILL pens and drying powders are still used in the House of Lords and in His Majesty's law courts. They are used in the French Chamber of Deputies and in the Court of Cassation also. But the people are coming to care little about maintaining these ancient dignities. Europeans need our fountain-pens and blotting-pads; they need our typewriters and rolling-top desks; they need our carpet-sweepers and curtain-rollers, our elevators and electric devices—they are beginning to buy them in large invoices. Their carpenters' handsaws are mounted like our bucksaws and their squares are made of wood. They need our handsaws, steel squares, spirit-levels, and screwdrivers; our hot-water, hot-air and steam heating apparatus. Foreigners do not produce these things as cheaply as we do. As conditions become better understood and closer relations develop, large invoices of these goods will supplement our exports of cereals, cereal flours, tobacco, mineral oils, cotton, phonographs, linotypes, telephones, bicycles, engines, meat products and machinery. Much will depend upon the

price of the goods and their adaptability. A Cincinnati firm was called upon to dismantle a lot of wood-working machinery which it had installed for a firm in Sweden. The operatives could not stand the work—the speed was too high. The feed had been gauged to the American scale. An expert reduced the feed. After that all went well.

Englishmen wear a shoe which they call a boot, quite different from the American garment. It is large for the foot, made of stout leather which lacks luster, and has a sole nearly an inch thick. Frenchmen wear a wooden shoe which they call a *sabot*. It is fitted with a leathern stocking, which latches tightly around the ankle. Many of those intended for women are lined with felt. In Germany, Norway and Holland prodigious wooden shoes are worn. One reason why American workmen accomplish more in a day than workmen abroad is because of shoes. Our shoes are lighter, easier on the feet, and thus permit greater action. German leather, however, is superior and the shoemaker uses a sensible last. In all these countries felt slippers are worn about the house, many of them having soles of plaited cordage. In the Pyrenees Mountains an important cottage industry has developed among the peasants who make these shoe bottoms.

Throughout the Balkan States, in France and in Russia much leather is tanned and large quantities of fancy grades exported. Manufacturers in this country import enamel leather from Europe. But our shoes are much neater, they fit better, and they retail at prices twenty-five per cent. lower than European shoes. There are reasons, however, why we do not sell more leathern goods abroad. In England an important and growing portion of the shoe business has passed under the control of profit-sharing, cooperative societies. Starting in Rochdale, these companies had a precarious existence for twenty or thirty years. But success has followed better methods of administration, and today they own some of the finest business houses in Manchester and in other cities in northern England. The shares are sold at a guinea, and this enables a large number of mechanics to own stock.

As a result, all the shoe trade which the guilds and unions control goes to these cooperative stores and factories. Such dealers as Manfield, who also have houses in the principal cities of Europe, have an established trade into which it is difficult to break. Natural conditions furnish another reason more fundamental than these. During the winter season it drizzles and rains a great deal

in the British Isles. Arctics, overshoes and rubbers are not worn so commonly as they are in our own country. We must study physical conditions in order to reach the possibilities of foreign trade. We have the hides and quick processes of tanning; we have the best mechanics for fabricating shoes and the best operating skill. We have the capital. In certain commercial fields our supremacy is admitted, and one reason for the dominating success of American business men in these fields is their ability to meet emergencies. The American inventor, manufacturer and salesman must come into close personal contact with the foreign trader and consumer. They must learn the essential facts and adapt their products to the people for whom they are planned in order to win success.

FIGHTING HARBOR FIRES

DING—ding—ding!" The Captain stopped abruptly in his conversation with a visitor whom he had just shown over the Battery fire station, whirled in his office chair and sat counting the strokes, his feet under him for a quick spring.

"If that's for us, you come along, too," he interjected as the gong paused again, and the visitor's pulses quickened with excitement and anticipation.

"We go!" cried the Lieutenant, as he leaped for cap and coat. A clatter of chairs and dominoes broke out in the lounging-room as the men abruptly abandoned their game; the gong began to repeat, and some one outside on the wharf was shouting.

"Meet me in the pilot-house," came the sharp direction of the Lieutenant, and the visitor, joining in the rush for the door, was one of the straggling line as it raced down across the wharf and swung himself over on a rope like the others to the fire-boat's rail. As he made his way forward the lines were cast off, and before he reached the pilot-house New York's "floating Niagara," as the firemen call her, was under way.

The wheel went over to starboard and the rumble of the steam steering-gear under the floor mingled with the warning roar of the whistle as she passed the wharf-end and swung toward the East River and Brooklyn. The speed steadily increased until the 750-horse-power engines were driving her a good twelve-knots clip and the foam went racing back in a rolling wake behind. Then the visitor began to learn.

The *New Yorker*, the largest of New York's five fire-boats, carries with her twenty men: officers, engineers, pilots, firemen and stokers, when she responds to an alarm.

Steam is always up. When either boiler is cooled down for inspection and repairs the other does double duty. In going to and from fires the boat is in command of the pilots, and, contrary to the general impression, it has no right of way. The siren is used only on entering a slip at a fire to attract attention. Shore fires one thousand feet back and fires in the enormously valuable shipping of the harbor and North River are the *New Yorker's* lawful prey. She sometimes releases the city engines from an obstinate water-front fire, and reaching out with more than five thousand feet of hose, her crew drowns the conflagration in worthless harbor water, to the saving of the city's fresh-water supply.

But when this fire fighter races down the harbor to meet some iron furnace struggling in from the sea with its load of desperate men and perishing goods, the name "floating Niagara" is earned. Firebrands may rain on cement deck and steel sides, but the little craft closes in; and through hose lines, galvanized iron flooding-pipes and four great "monitor pipes"—nozzles mounted on pilot-house and deck like rapid-fire guns on a warship—she pours twelve thousand gallons of water a minute into the burning hull. There are ingenious appliances for reaching the fire however it may be hidden away in a ship's cargo, and more than twenty streams of from one to six inches' diameter are available whenever they are needed.

An account of the fires against which the *New Yorker* has led the attack since she went into commission would rival in interest the story of any ship-of-war that ever floated. Close upon a seventeen-hour fire not long ago, the *New Yorker* was called out in the gray light of the morning for thirty-two consecutive hours' more of fighting in the dense smoke of a city lumber-yard fire. Twelve million seven hundred and sixty-six thousand gallons of water thrown and five men disabled was this fire company's record.

LABOR-UNION STORIES BY AN EMPLOYER

THERE are two classes of men in this labor question," said a manufacturer the other day—"men who own property and men who do not; and the first class is likely to be the check on the second.

"For instance, there's a mechanic whom I've known for years—a clean-cut, hard-working, thrifty man, who has taken good care of his family and has saved enough money to buy a pretty home outright. He joined the union when he saw he could be forced into it and then forgot all about it—for he's a hard-working fellow, who is interested

ONE USE OF MACHINERY

in his task and believes in his employer more than he does in his labor leader. A strike was ordered and he reluctantly went out with the rest. Time hung heavy on his hands, and he decided that he'd give his new house a coat of paint. So he left an order with a union painter, and the next morning he was out early to supervise the job. He fidgeted about until 8:15, when the painter drove up and leisurely prepared for his work. It was half-past nine when the man began to paint, and then he did it so slowly that the striking machinist grew tired of delay and, putting up a ladder on the other side, went to work himself. He had been painting away vigorously for some time when he heard a voice below him:

"'Hello, what're you doin' up there?'"

"'Painting my house,' he answered."

"'Have you got a union card?' said the painter."

"'Yes,' said the man, who was gradually getting angry at the questioning."

"'A painter's card?' asked the man below."

"'No, I haven't a painter's card. I've a mechanic's.'"

"'Then,' said the painter, 'come down off that ladder and quit paintin' or I'll leave the job.'"

"The mechanic came down from the ladder and walked up to the painter he had hired."

"'Look here,' he said, 'this is my house and this is my land. Now you get off it just as quickly as you can pick up your paint.'"

"'And he painted his house unaided that day and the next, and then went back to work in his old place."

"I remember," he went on, "reading in THE WORLD'S WORK about the native labor in India when they put up that big American bridge out there. The natives could do only one well-defined task; the Americans could do almost anything. There's a machine in my shop that merely needs to be watched, but it must be watched by a skilled mechanic. While he is watching that machine he can do another task that is more valuable. But by the rule of the union, that man must sit in a chair all day and watch that machine. He mustn't do anything else. It's waste time for him, for he can't grow very rapidly there, and it's adding to my cost of production without doing any one any good. The American workman can't afford to be a man with only one job. They've got to work with us if we're to keep our prosperity. We can't do it without their help, and we certainly can't do it in the face of their opposition."

THE picture of an English or German farmer walking about his fields in a pair of brogans made in America from a hide which, tanned and likewise finished in America, was originally taken from one of his own cattle, might be a little fanciful, but it is within possibility, as a glance at foreign trade reports for 1902 will show. We imported about \$60,000,000 worth of hides and skins, of which a good part came from England and other European countries, and we exported, largely to the same countries, \$20,000,000 worth of shoes and finished leather. Two trips across the Atlantic and considerable land travel beside offer thus a fair measure of the superiority of our shoe and leather manufacturers over their foreign competitors. The efficiency of the leather maker helps the shoe manufacturer in his fight for the world's market, as nearly two-thirds of the value of his product is the cost for materials alone.

The introduction of machines that not only reduce the amount of labor but frequently replace skilled labor with unskilled, and the quickness of employers to adopt new processes, account for our success. A visitor to a modern tannery would see a man here and there dumping a hide upon a moving feed-table that smooths and straightens it out and then passes it through a machine, pressing it evenly and gently against a revolving cylinder, spiraled with knife-blades, and drops it out at last clean and without a cut or tear. He would see "putting-out" machines that pressed and scraped tanned hides at the rate of 350 dozen per day, attended by only one man; or splitting machines where a belt of thin steel, sharpening itself by touching an emery wheel as it whirled, could split a hide with the deftness of magic into sheets as thin as tissue paper—a machine that can be adjusted to the thousandth part of an inch. The ancient tanner paid an expert high wages to guess at the contents of his hides when sold by measure. Today an unskilled workman hands the irregular-shaped pieces to a little machine that looks something like a table with a double top, which, quicker than the mind of the expert could guess it, reckons with exactness the square contents in both the metric and standard systems.

But the new processes used in tanning are most surprising. Leather used to be tanned by soaking it for seven days in a weak solution of hemlock or oak bark to give it color, then in pits of stronger solution for six weeks, moving the hides every day or so; then in "lay-away" pits still stronger for another six weeks; by

filling them with new bark for another six-weeks' soak, and repeating this last operation thrice or four times. All this made good leather, but it took from six to eight months. Today even the thickest hide can be tanned by chemicals in three hours. Germany has led in the discovery of new processes, but American tanners have been quick to follow the German example.

THE SCHOOL NURSE

ONE of the most important services of the Board of Health in a large city is the careful medical inspection of school children to stop the spread of contagious diseases. In some of the crowded districts of New York last fall more than two thousand children a week were turned away. Rigid examination and exclusion like this greatly lessens the possibility of widespread epidemics. It was felt, however, that something was due the children whose education was thus delayed for the public good. To this end an experiment was tried with a single school nurse, having much the same duties as the "school nurse" now so important a part of the London school system. And the result after three months was an appropriation by which twelve regular nurses at the beginning of the new year were set at work.

The nurse by whom the experiment was tried was assigned a group of four schools with a school population of about 4,500 children. She visited each school every school day. Her work was divided into schoolhouse work and visiting work. At the school, pupils who were but slightly ailing received treatment first. When these children were cared for Miss Rogers took up her list furnished by the medical inspector of the pupils excluded.

Forestalling the danger of contagion, the child was sent home by the medical inspector. This separated the pupil from his schoolmates, however, only during school hours. The school-going and excluded children intermingled after hours for play. The nurse visited all of these children at their homes. She explained to the parents the school and Health Department rules. She told why the child must be isolated, how he should be treated and attended to in order to carry out the directions of the medical inspector or dispensary physician and insure an early return to school. These visits were repeated that the case might be watched, a record being

made of each case and each visit. A daily report was handed to the Health Board.

The duties of the school nurse are outlined in this work. She continues the work begun by the medical inspector, and works only under the direction of the Health Department. She first attends to the minor infections, which, if neglected, would soon exclude the child from his class-work. This is done at the school. Then she attends to the children who have been sent home—sees that they have medical attention and regular treatment. She gives the mother or caretaker a practical demonstration of how it is all to be done, and exacts a promise of as complete isolation as is possible. She continues the work of the previous visit and sends back to the school for medical inspection all such children as seem to her to have responded to the treatment and recovered enough to be admitted to class-work. Thus she teaches the child not only to protect himself from contagion by keeping him from his playmates, but he learns as well that a cure in time saves many school days for him, and that the doctor as well as the teacher is his friend.

A typical case is that of a boy twelve years old who had never had a day's schooling. His ambition was to be able to read the street signs before he began to go to work. His mother had taken him to school each term, but because of a slight disease he was always excluded from the overcrowded schools. Each time the mother had been sent to the dispensary, and each time had been given an ointment, which she had applied. But he did not have proper care. With the nurse's help he was soon at school again. At the age of twelve he began to learn his letters with the prospect of two years' schooling before him.

One of the most important results of the school nurse's work comes with the added knowledge of how to take care of children's little ailments which the mothers acquire by watching the nurse's methods. She fills in a gap in what, in other ways, is a most admirable and necessary system.

By the addition of the nurses' services the chance of a bad epidemic among school children is still further obviated. The child, moreover, gets immediate and adequate care at the school and at home during his illness, and, because of the example of the nurses' scientific and practical work, better general care, when sick or well.



Photographed by C. M. 347

MR. GEORGE BRUCE CORTELYOU

THE FIRST SECRETARY OF THE NEW DEPARTMENT OF COMMERCE AND LABOR

(See pages 3337 and 3338)

THE WORLD'S WORK

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The March of Events

IN a general view of the work of Congress during its recent session, the acts that stand out are such things as the tentative anti-trust legislation and the creation of the new Cabinet Department of Commerce and Labor, and the conclusion of the isthmian canal negotiations—in other words, great subjects of commercial rather than primarily of political importance.

The canal has fortunately been kept clear of politics. For many years both parties have been committed to it. In the background of the anti-trust legislation partizan-ship does lurk, or the possibility of it. But the legislation that was enacted was considered to be in response to a demand made by the masses of the people. There is no doubt that the public temper called for at least an effort to assert national authority to some extent over the great commercial combinations. Nobody yet knows what this legislation will accomplish; but for the time being it has quieted, if not satisfied, the popular feeling that something should be done to show that "the trusts shall not own the government."

Considered politically, the Republicans have stolen the Democratic thunder. An anti-trust cry might have played, and if prosperity wanes may yet play, an important part in the next presidential campaign. But, with fair wind and weather, this cry can now hardly be used with great effect by the Democrats against the Republicans.

The President (for it was chiefly his work, because of his persistent agitation of the subject) has relieved his party of the necessity of occupying a defensive attitude. Politically considered further, this anti-trust legislation has not been sufficiently radical to drive the great commercial interests into an unfriendly attitude to the Republican party; or, to put it in another way, the Democrats have given these great interests no reason to prefer a Democratic administration. The party in power, then, rather strengthened than weakened its popular position during this session of Congress.

MR. ROOSEVELT'S PARTY LEADERSHIP

CONCERNING other questions of national politics as they are left at the close of this last session of Congress—most of them are dead or settled, except the tariff. That is quiescent, but it may at any turn of the road become active. The anti-imperialistic cry has ceased to attract public attention. The large appropriations for the navy (for we are now definitely committed to a policy of great naval expansion) can hardly arouse definite partizan opposition. The old anti-English yawp is now seldom heard in our national politics. Coercive measures directed at the South are not likely to be revived unless they take the form of an effort to reduce Congressional representation. Of course, the old free-silver agitation is ended. A straight, hard, open fight will come, when it comes,

about the tariff; and, until that come, the Republican party seems to have reasonably clear sailing before it; and Mr. Roosevelt has so far kept and strengthened his hold as captain. In the silent under-world struggle for party leadership he seems now definitely to have won. The political outcome of this past session of Congress was the demonstration of his victory. The formerly discordant elders now sing in tune or they sing low.

THE NEGRO CONTROVERSY LOCAL IN ITS POLITICAL EFFECTS

IT is now hardly more than a year before delegates will be chosen to the national conventions. Although we shall have a long session of Congress before next summer—and a long session of Congress is sometimes fruitful of political issues—the outlook for Mr. Roosevelt's nomination is as clear as such a thing can be a year beforehand.

His unusual personal popularity has suffered in a part of the Union and for a reason that can have little or no influence either on his nomination or on the vote that will be cast for him. There has been a persistent and almost violent change of feeling toward him in the South. If the South could prevent either his nomination or his election, it would do so. But northern opinion is not going greatly to concern itself about the South's difference with the President about the Negro; or, if it do, sentiment in the dominant Republican States will show itself rather with Mr. Roosevelt than against him.

The probability is that this whole subject, which has caused so much excitement in the South, will cut a small figure in the next national campaign—unless the next Congress happen to give it such expression as may bring the Negro again into national political discussion. Such an event might follow an effort to cut down the Congressional representation of the southern States or an effort to repeal the fifteenth amendment to the Constitution. But it is likely that the subject will be exciting and important hereafter only in the southern States. For any agitation to repeal the fifteenth amendment, if it should be made, would bring only futile discussion and stir up sectional feeling. Its repeal is the most impossible of impossible tasks. There is now no reason to suppose that the present discussion will be an important factor in the next national election.

HOW TWO MEN TALKED THE GOVERNMENT STILL

TWO Senators took (and wasted) nearly one-third of the working days of the last session of the Senate—Mr. Quay, in trying to secure the admission of Arizona and New Mexico, and Mr. Morgan, in trying to defeat the treaty for the Panama canal. Neither had his party behind him. Neither had a party issue. Neither had a chance to win. Neither won popular favor. Both were simply stubborn, and Mr. Morgan was stubborn for an honest preference. He had no personal advantage to gain.

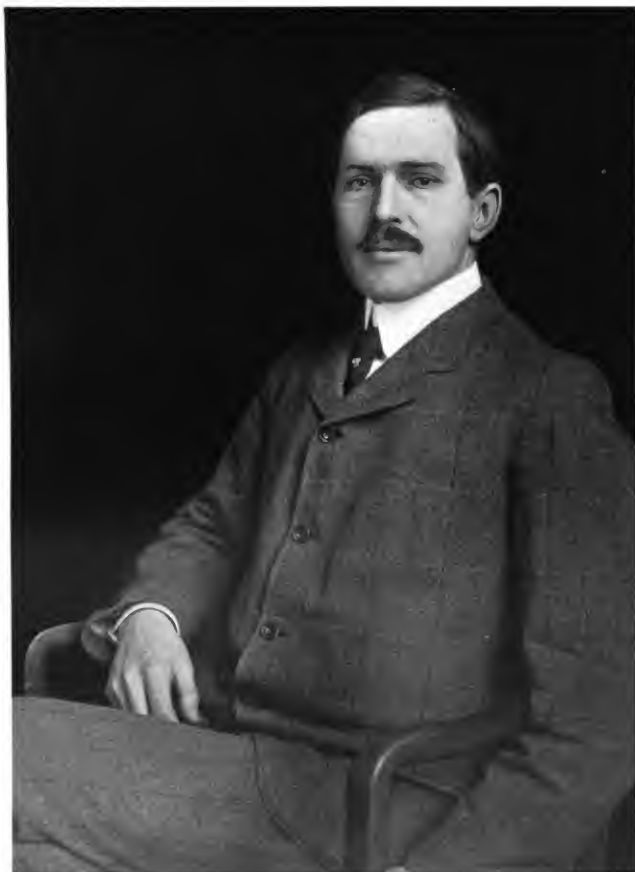
The situation was shameful. Yet it is a situation that may at any time recur for any purpose—whether for a stubborn whim or for an unworthy motive. Under the rules of the Senate, debate cannot be closed, a final vote cannot be reached by the majority, no matter how large, until every Senator who wishes to talk ceases to talk.

Now, whatever may be the value of free and thorough discussion, it is plain that one thing has resulted from this system—the action which must be taken sooner or later and which cannot be forced by the majority, is reached by "compromise." That is to say, it is reached practically by traffic—by what are known in politics as "deals."

Thus it is a matter of historical though not official record that the passage of the Dingley tariff-bill in the Senate was secured by conceding to an obstinate minority the passage of the Sherman Silver-Purchase law, probably the most pernicious and disastrous financial legislation ever enacted in the United States. And later the passage of the misnamed Wilson tariff act was effected by placating—we had almost said buying—votes with provisions so abhorrent to President Cleveland that he refused to sign the bill, permitting it to become law without his signature.

Can proper and sufficient debate be had without the privilege of endless talk in the Senate? Some of the most able and honorable members that body has ever had have thought that it could be. The majority could have the power to close debate on fixed conditions and after a certain time not arbitrarily—the plan, in substance, of the House of Commons.

And it must be remembered that Congress



Photographed for The World's Work by Frances Benjamin Johnston

MR. JAMES R. GARFIELD

COMMISSIONER OF CORPORATIONS IN THE NEW DEPARTMENT OF COMMERCE AND LABOR

(See page 3334)

is not now, as it was in our earlier history, the chief, almost the sole forum of discussion. The press serves that purpose in some respects admirably; not merely by the pens of its writers, but by the publicity it gives to the utterances of men in a position to influence opinion. Its efficiency in this direction has grown far more rapidly than has the efficiency of Congress. President Roosevelt's speeches on the trust question last summer were read by many times more voters than were reached by all the speeches in Congress during the session. Nor must it be forgotten that debate in the Senate, though it may possibly change opinions, rarely changes votes.

THE NATIONAL BANKRUPTCY LAW

THE strong and persistent effort to secure the repeal of the national bankruptcy act failed at the last session of Congress; but the law was so amended as really to insure its continuance. And it seems to have proved its worth. Its chief purpose is to fix such conditions to the release from debt as tend to make traders honest. Starting with the assumption that it is better for the community that debtors who cannot pay, and who have conducted their business in good faith, and are ready to give up all their assets to their creditors, should be freed to begin again, the law was carefully framed to prevent the release of those who have meant to cheat or have been criminally careless or extravagant. The testimony of commercial organization, especially that of the strong Credit Men's Association, with its ramifications in every part of the Union, is conclusive that the law has done much to raise the standard of commercial integrity in both the retail and the wholesale trade. It has been found, on the one hand, that credit is more easily had by those who are entitled to it, and on the other hand that pure misfortune is more readily remedied. Both debtors and creditors of sound character have profited by its operation.

The amendments that have been made to it throw the burden of proof on applicants for discharge of indebtedness that they have complied with the law, and especially that they have kept sufficient and correct accounts. A man claiming so great a favor from the law on the ground that he is unfortunate but honest cannot complain if he is forced to prove his honesty.

PROGRESS IN CHILD-LABOR LEGISLATION

THE movement North and South for the legislative restriction and regulation of child-labor accomplished definite results during the recent legislative season. Child-labor laws were enacted in Alabama, South Carolina, North Carolina and Virginia. In Georgia, where the Legislature meets again in June, legislation is regarded as inevitable and in Texas, where the Democratic party is committed to the reform, the movement for a child-labor law will probably be attended with success. The passage of these measures in Alabama and the Carolinas shows that the tendency of southern opinion, even where the textile interests are strongest, is humane and sound.

The laws thus far secured in the South are not perfect. The South, however, has been the home of the doctrine of "non-interference" and the mere recognition of the principle of State control is a long step in advance. Climatic conditions are partly responsible for the conservatism of the measures enacted for the child of twelve in the South is usually as fully developed as the child of fourteen in the North. The Alabama law, which is similar to the legislation in most of the southern States, totally prohibits child-labor in factories for all under twelve, except in the case of the children of the widowed mother or the disabled father; it prohibits child-labor for all under ten without exception; it prohibits all night work for all under thirteen; and it limits night work to forty-eight hours per week for all under sixteen. Such regulations are far from adequate, but they represent a decided advance upon conditions in which certain mills have been working children of from six to ten years of age for thirteen hours a day—and sometimes far into the night. Almost all of the women's clubs in the southern States have been on the right side of this question from the first.

The movement at the North also for more satisfactory child-labor legislation in Illinois, New York and Pennsylvania is likely to result successfully. Best of all, there is being created a public sentiment, a national solicitude in the interest of the factory child, which will prove quite as helpful and effective as better laws.

The essential soundness of the American character shows itself quickly and firmly in response to such a movement.



REV. DR. EDMUND M. MILLS

WHO MANAGED THE COLLECTION OF THE METHODIST THANK-OFFERING FUND, BY WHICH \$20,000,000
WAS OBTAINED FOR EDUCATION AND BENEVOLENCE

(See page 3309)



MR. HEINRICH CONRIED

Photographed for the World's Work by A. R. Dugmore

THE NEW MANAGER OF THE METROPOLITAN OPERA HOUSE IN NEW YORK CITY

THE MORE STRINGENT LAW AGAINST RAILROAD REBATES

NO amount of preliminary discussion can throw much light on the real value of the anti-trust legislation of Congress.

It is divided into two parts—that aimed at interstate railroads and that aimed at other interstate corporations.

The Elkins bill, which strengthens the present Interstate Commerce Act, is aimed at preventing the giving and receiving of secret rebates. It looks as if its rigid enforcement would make rebates and discriminations in rates practically impossible. In the first place, it makes rebates an offense where there is no discrimination shown. Under the former law they could not be punished unless discrimination were proved. Now variation from the published rates and failure to publish rates are in themselves punishable.

In the second place, the penalty of imprisonment for individuals is done away with, and every offense of an officer or agent is made the offense of the corporation, which may be fined for it from \$1,000 to \$20,000 in each case. Under the old law evidence that would lead to the imprisonment of persons was almost unattainable.

In the third place, the taker as well as the giver of rebates is made accountable, and the chances of detection are greatly increased.

Finally, the courts are given power to proceed civilly against corporations, and to enjoin illegal actions, a power more extended and elastic than that of criminal procedure. Special authority is also given to advance cases under the law by summary action, and to appeal from the court of first instance directly to the Supreme Court, which ought to save much time and uncertainty. It is the opinion of those best qualified to judge that this law can be made effective.

At the same time it is to be remarked that "unity of interest" between the main transportation lines and the main industrial combinations has made the old form of favor by rebates less frequent and less sought after.

So much for the restraining legislation that is aimed at railroads.

THE LAW TO INVESTIGATE CORPORATIONS

THE new anti-trust law is meant to apply the remedy of publicity. It provides for the investigation of corporations by the new Department of Commerce and Labor.

A Bureau of Corporations is created in the new Department of which the head is called the "Commissioner of Corporations." The law says that he "shall have power and authority to make, under the direction of the Secretary of Commerce and Labor, diligent investigation into the organization, conduct and management of the business of any corporation, joint stock company or corporate combination engaged in commerce among the several States and with foreign nations except common carriers," and "to gather such information and data as will enable the President of the United States to make recommendations to Congress for legislation for the regulation of such commerce." "The information so obtained or as much thereof as the President shall direct shall be made public." For these purposes he is given the same power as the Interstate Commerce Commission to "subpoena and compel the attendance and testimony of witnesses and the production of documentary evidence and to administer oaths."

This is a definite extension of governmental power. It is admittedly experimental. But it can bring, in a sense, any corporation under the investigation of the general Government whenever the Secretary of Commerce and Labor may so direct.

THE CORPORATION INVESTIGATORS

IMPORTANT and even surprising consequences may follow these investigations by the Government into the conduct of corporations. With more knowledge the way may be made clearer for further legislation than it now is; for the Administration and Congress and the economists themselves are yet groping—feeling their way toward some clearer course of action.

At the head of the Department of Commerce and Labor the President has placed his friend and former private secretary, Mr. Cortelyou, and he has appointed as Commissioner of Corporations Mr. James R. Garfield, of Ohio, former Civil Service Commissioner, an able and independent man, of experience in public life and of aggressive energy, shown heretofore in the support of excellent aims. In such hands the authority to investigate may be used with vigor, and the President as well as the trusts may be surprised at the outcome. Probably, on the whole, Mr. Garfield's roving commission for inquiry, if

not exactly the "very long stride in advance" which Mr. Knox declares it, is as long a step and in as nearly the right direction as could have been taken.

WHY SO MUCH UNINVESTED CAPITAL?

JUDGE GROSSCUP, of the United States Circuit Court, recently delivered an address at the University of Michigan in which he argued that industrial consolidation was making the mass of the people mere lookers on and not participants. Yet, as he showed, the wealth of the people has rapidly increased. From 1890 to 1900 the increase of population was about twenty per cent.; of "general wealth" about twenty-three per cent., and of bank deposits eighty-five per cent. Then he put this question:

"Can any one explain this disproportion of the growth of uninvested capital—a disproportion beginning with activity in consolidation and rising rapidly as consolidation increased—except upon the inference that the people, having little confidence in existing trust organization, have been thus cut out from ownership in the industries of the country?"

... Showing as they do that the people at large are withdrawing from ownership in the industries of the country, they point to a time in the near future, if the present methods of consolidation go on, when, barring the shopkeeper, the farmer and the owner of city real estate, and barring the man who is willing to take chances upon an unknown venture, there will be but comparatively few proprietors among the run of citizens who ordinarily would be interested in the country's industries."

In another part of the same address he said:

"There is now in the hands of the people uninvested capital nearly sufficient to buy out, at the valuations of 1890, the existing manufactories or the existing railroads, or one-half of the farm property of the country. It constitutes nearly one dollar in ten of all the dollars that measure the country's entire wealth; and what is more, it is available at any moment to enable the people at large to re-enter the proprietorship of the country."

THE PEOPLE RICH IN SPITE OF THE TRUSTS OR BY THEIR HELP?

THE situation, as set forth by Judge Grosscup, is that, although the great companies are consolidating the industries of the country, the people have more money than they ever had before. This state of things causes different men to draw very different conclusions.

The defender of trusts will say that the trusts have added to the people's prosperity by paying good wages and dividends, and that a large part of the trusts are owned by the people.

From another point of view, it is said that the people are afraid to invest in trust shares and are hoarding their money in banks that pay from two to four per cent., for fear of losing it; and that they are debarred by the trusts from engaging in industrial undertakings for themselves.

From another point of view it will be said that men who keep their money in banks that pay only two to four per cent. thereby confess their lack of ability to make profitable use of it in productive ways. The man who shows the qualities of industrial leadership can get all the money he needs.

This striking statement of the facts about the people's wealth, therefore, does not point the way to any conclusive opinion. Opinions depend on the state of mind of those who consider them.

A GREAT ENGLISH EDUCATOR ON AMERICAN SCHOOLS

"At rare intervals in the history of a nation there comes a great outburst of physical and intellectual energy which, with overmastering power, carries forward the masses of the people, together with its leaders, in an exhilarating rush of common effort. In the United States of America such a movement is in progress to-day. It reveals its force at three points—the American workshop, the American office and the American school. Of the tremendous power of the movement no one who has witnessed it can doubt. . . . Of all the educational movements now going forward in the world, that in America seems to me at present the most forceful and pregnant in great issues."

THUS spoke Mr. Michael E. Sadler, the English leader in education, who spent some time in the United States last summer, in summing up in an address at Glasgow his conclusions about American education. His judgment on the subject is as highly regarded as is the judgment of any man living. The favorable things in his summary are these:

1. The earnest belief that he found in education. "That is the heart of the whole matter," said he. "America believes in education. . . . The American school is radiant with its belief in its mission."
2. "An eager belief in individuality," which "is the essence of a democratic com-

monwealth." . . . "For the work of the earliest grades of American education the harshest critic would give little else than praise. In the first four years of school life the child is stimulated to self-expression and self-realization by teachers skilful in their art and unwearied in their practice of it." "Thus the American believes in education because education equips individuals for the tasks of American citizenship."

3. He found a conviction that great changes are impending in the subject-matter of education. Teachers are endeavoring to "tear out the non-essentials." They have a tendency to "employ labor-saving appliances in education" and to "avoid to the utmost the waste of precious time."

4. The Americans "have grasped the fact that for national welfare under modern conditions the highest and most costly types of technical and university training are as indispensable as the kindergarten and the primary school." . . . "The American organizer of industry believes, as a rule, in the college-bred man." He added:

"Modern industry and business need the products of the highest education, but they cannot afford to pay for, nor will they put up with, fine academic airs and fastidious nonsense, or unwillingness to do the rough work which every one must learn to do who means in truth and through and through to learn a trade."

And he paid a tribute to the American generosity that establishes well-equipped universities and technical schools.

These four important facts impressed Mr. Sadler very strongly.

THE SHORTCOMINGS OF AMERICAN EDUCATION

BUT Mr. Sadler found also several reasons for friendly criticism of our educational thought and practice which may be more useful for us to consider than his praise.

He feared that our methods "stimulate interest without laying corresponding stress on intellectual discipline"; and he finds that parents also fail in the discipline of children. This tendency he regarded as a revolt against "the repressive precision of the overstrict Puritan home."

This lack of severe discipline leads to superficiality "with its attendant evils, exaggeration in language and love of excitement."

He fears that we make too many short cuts and are too fond of the last new thing.

Another criticism of American training and of American life is, that the men become unduly concentrated on business pursuits—not for the sake of wealth, but for the material comforts and for the power that success brings. "One is tempted to say that a special danger of American life is the pursuit of material success in the spirit of idealism, while the converse danger in English life is the pursuit of ideal aims in the spirit of materialism." We need "variety of culture, variety of type and variety of standards of success."

AN ENORMOUS EXTENSION OF PUBLIC SCHOOL INFLUENCE

IN another part of this magazine the story is recited how the public schools of New York have entered upon the education of adults, offering free lecture courses, many of which would do credit to the halls of colleges or the platforms of the old-time lyceum. Boston, Newark and other cities are copying the example of New York; and the plan is applicable to villages and to towns large or little. Everywhere the school building may become a new social centre for the people of its district, in summer and winter, by night as well as by day. A capital lantern with a sheet twenty feet square, and a hundred carbon pencils for electric illumination, can be had for \$115. Slides ready made, or made to order, may be had at moderate prices in all our cities. A school equipped with a lantern and rightly chosen pictures can give a new meaning to many subjects; it can continue beyond girlhood and boyhood the instruction of the people, and, not less important, their worthy entertainment as well. Everywhere in America there are men and women able and willing to carry out programmes that can add a new interest and joy to the community's life. The staff of the nearest academy or college may be enlisted, then lawyers and journalists, clergymen and physicians of the neighborhood, and anybody else who deserves to be heard. An inventor may tell how he came to perfect an ingenious machine. An amateur astronomer may show how much of the heavens declare themselves to a common opera-glass. An old resident may recall distant days of hardship and triumph, and their contrasts with the age of the wireless telegraph and the

steam turbine. Those who travel may take their neighbors with them, after they come home. Men and women worth knowing would be better known than they are and would contribute more to the community's information and pleasure. Their experience, talent, culture, would pass into the common treasury for a currency that would enrich others and themselves. And there would be measureless relief from the vacuity and dullness which oppress millions of our people, especially in lonely villages in the dreary nights of winter.

THE WIDENING SCOPE OF INSTRUCTION

GROUPS of facts present themselves with startling rapidity that confirm Mr. Sadler's opinion that the American people are in dead earnest about education. Such a great movement as Mr. Iles describes—of free popular lectures of solid worth; the equipment, at the other extreme of educational work, of such an institution as the Rockefeller Institute for Medical Research; the endowment of men to carry on research in many fields of work, by the Carnegie Institution; the continued benefactions to well-established institutions, as the recent anonymous gift of \$1,000,000 to Barnard College in New York, and the gift of quite as much to Trinity College in North Carolina by Mr. Washington Duke and his sons—these are only detached instances of what is going on in every part of the land for education both in some of its most popular phases and in some of its most learned.

It was significant that the announcement of a sort of traveling medical university that is about to be equipped by the German Government attracted universal attention in the United States. The most skilful surgeons and practitioners of medicine will go from place to place and perform operations and make diagnoses and give instruction to local practitioners. It is a plan that to the lay mind at least shows much common sense.

THE BITUMINOUS COAL SETTLEMENT.

WHILE the extraordinary anthracite coal commission was still in session, and the operators and the mine-workers were disputing their claims with unpromising and uncompromising bitterness, in the bituminous region the mine-workers' organization met the employers and came to an agreement.

An advance of about one-eighth in the average wage was made and accepted for a year. A strike that had been discussed rather than threatened was thus averted, and reasonable stability is assured.

It can hardly be assumed that a like result could have been reached in the anthracite region in a similar way, for the conditions are somewhat different. But only a few years ago such a result in the bituminous region was declared by the employers to be hopeless for much the same reasons now assigned in the anthracite region—the great differences in the conditions at the various mines and the impossibility of holding the union to responsibility. It may be that Mr. Mitchell cannot do with the miners of Pennsylvania what he has done with those of the half-dozen States in which soft coal is produced. But to the outside observer the real obstacle may well seem to be the lack of that good-will and intelligence in one region which has been shown in the other.

THE POSSIBLE END OF THE IRISH LAND QUESTION

NOT long ago a brilliant Irish member of Parliament visiting this country was asked to define the Irish land question as it then was. He replied by quoting the saying of Lord John Russell about the Schleswig-Holstein question: "Only two men ever understood it, I and another. He is dead and I have forgotten it." So hopeless did the Irish situation seem at that time from the tangle of interests, prejudices, passion and political ambitions in which it was wrapped. Today, at the opening of Parliament for a session at which Ireland bids fair to be the chief matter of discussion and action, the chances of something like a solution are bright.

The change is largely due to the conference of landowners during the winter represented by Lord Dunraven and Lord Mayo, and the occupiers of the land represented by John Redmond, Timothy Harrington, William O'Brien—all members of the Irish party in Parliament—and by T. W. Russell, a Conservative. This conference recommends Government aid in the transfer of land from the present owners to the present tenants, at prices to be based on income, the Government to guarantee the payment of the income or a price that will yield the income at from three to three and one-half per cent., and to collect

the amount from the purchasers in instalments. The process would involve a net loss to the Government, the exact amount of which is not definitely estimated. But it is contended on both sides that this loss would be much more than offset by the reduction in the cost of ruling Ireland, even, in fact, by the less cost of the constabulary alone.

In theory this looks like buying peace, and it would have been resented and denounced five years ago. Now there is a fair chance that it will be accepted. There is comfort in the inference that in the long run the selfish interests of men tend more and more to produce peace and justice. The elimination of the Irish land question from the great controversies of our time would mark a new epoch in English experience and would give the rest of the world relief that it would be grateful for.

HOW THE CHANGE HAS BEEN WROUGHT IN IRELAND

ONE of the most effective causes of the promised new and happy era in the Irish land question is the movement for "help to self-help" of which the Honorable Horace Plunkett is the active leader. Officially it is known as the "Irish Agricultural Organization Society." This society, which began work about nine years ago, now has 70,000 members, and since nearly all are heads of families, it represents at least 350,000 of the agricultural population of Ireland. Its purpose is to organize the farmers for coöperation, not in the ownership of land, but in its cultivation, in the provision of the supplies and machinery, in the preparation and the marketing of the crops, and in the provision of financial credit. The central society furnishes organizers and instructors, but the management of business is entirely democratic in each society. The two cardinal principles are that the progress—the salvation, indeed—of Irish farming must come from the individual farmers, and that it can be attained only by united effort.

Some of the industries in which the organization has accomplished great things are the production or manufacture of cheese and butter in factories and creameries, the production of poultry and eggs, the raising of cattle and hogs and the production of pork, bacon, hams and lard, the raising of sheep and the production of mutton and wool, as

well as the making of woollen fabrics and the numerous small home industries connected with the farm. By coöperation the best stock and machinery, too costly for small tenants, are obtained. Uniform quality and preparation of goods are secured, with the advantage that these give in the markets, better terms are made for transportation, sales are made directly by the agents of the society, and markets are developed and extended. In the agricultural banks, with joint liability, the miracle has been accomplished of a group of insolvents making a profit by lending to each other. Extraordinary as this is, it is literally true.

Apart from the material benefits secured, and in connection with them, there has been an increasing advance in mutual confidence among the members of these organizations, accompanied by a corresponding advance in self-respect. Here, then, are the roots of the material and moral progress which has made possible the approach to agreement between the landowners and the occupiers. Farming has been made profitable. When there was little or no profit in it the parties to a loss could not well agree.

It is interesting to know that when Doctor Frissell, the Principal of Hampton Institute for the training of Negroes and Indians, was in Ireland last summer, he was so impressed by the work of Mr. Plunkett that he invited him to visit Virginia to investigate conditions in that State and to make suggestions about the practicability of a similar organization in the South. This Mr. Plunkett did, and it is probable that organizers who have had signal success in Ireland will come to this country to begin a similar movement.

PROGRESS FROM THE BOTTOM

THE Negro conferences held every year at Tuskegee Institute in Alabama get to the bottom of things. There is probably no other meeting of men at which there is such a frank discussion of the fundamental facts of everyday life. Are you out of debt? Do you own your house? Have you any land? How are you getting on? Men come from considerable distances and hold "experience" meetings by asking and answering such questions as these. These conferences have now been held for twelve years, and every year the reports are increasingly encouraging. The people and the

newspapers of the South show a growing and eager interest in these meetings.

Mr. Booker T. Washington has thus briefly summarized their aims: "Securing homes, the freeing of ourselves from debts, the saving of money, the encouragement of intelligent producers, the payment of taxes, the cultivation of habits of thrift, honesty and virtue, the building of schoolhouses and churches, the securing of education and high Christian character, and friendship between the races." This year he said that because of "the many homes that have been secured, schoolhouses built, debts paid, taxpayers produced, and State and local Negro conferences organized, the feeling of hope and encouragement" throughout the entire race is justified. "No race that is patient, long-suffering, industrious, economical and virtuous, that is persistent in efforts that make for progress and that cultivates a spirit of good-will toward all mankind, is ever left without reward."

Wrangling about appointment to public office may or may not have a place in the many-sided economy of American life, colored as well as white; but, whether it has or not, the straightforward sort of work done and reported at these meetings spells advancement in capital letters. There may be doubt about other things, but there can be no doubt about that.

SILVER COUNTRIES MOVING TOWARD THE GOLD STANDARD

MEXICO recently took a step toward extending the gold standard and to solve the vexed problem of the use of silver as currency in a way to avoid the effects of rapid changes in its value measured in gold. Heretofore the standard of value in Mexico has been silver, which it also exports in very large amounts both as coin and as bullion. Its standard coin is the dollar, or peso, at a legal ratio of sixteen-and-one-half to one of gold. Within the last thirty years the market ratio has fallen until a dollar in gold exchanges for about thirty-two in silver. The payment in gold of the interest on Mexico's considerable national debt and the violent fluctuations in foreign exchange have thrown heavy burdens on the country, which have been borne with extreme honesty and courage, but which hinder the progress of industry—a progress that has still been remarkable.

What Mexico now proposes is to keep a steady relation between silver and gold by the issue of a new silver coinage at the ratio of thirty-two to one, to be limited as nearly as possible to the needs of trade, and to be kept at par by the use of a gold reserve in the treasury. In principle this is the present system of the United States, which maintains about \$500,000,000 in silver coins and certificates at par at the ratio of sixteen to one by the strict limitation of the amount, by taking silver for public dues, and by a gold reserve pledged to the maintenance of the parity of all forms of money issued by the Government. It is also the plan in substance adopted in 1893 by Great Britain for the currency of India when it stopped the coinage of silver and formed a gold reserve to maintain the par value of the rupee. It is practically the system adopted by the same country in the Straits Settlements and in the Confederate Malay States and by the Netherlands Government in Java.

It is a definite abandonment of the bimetallic scheme which rested on the unlimited coinage of both metals at a fixed ratio, for this plan rests strictly on the limitation of the coinage of silver. In other words, the old bimetallic plan has been practically abandoned throughout the organized world.

The Government of Mexico recently sent to this country a Commission, consisting of an eminent banker, Mr. Creel, and a member of the Senate, Mr. De La Garza, to invite the moral coöperation of the United States in the adoption of this general plan by countries having the gold standard at home, but having possessions, like our own in the Philippines, with a silver currency. The Chinese Government joined in this appeal, and it was cordially received by President Roosevelt. Its success will rest on the firmness with which the issue of silver coin can be limited and by the provision of a sufficient gold reserve to maintain the parity at the ratio adopted. The plan means, of course, the ultimate adoption of the gold standard by Mexico.

China must sooner or later follow some such example. Then the old silver question will have been practically settled the world over. Every movement toward a universal gold standard buries still deeper the silver heresy, which, supported by practical politics, menaced American prosperity and the good repute of the United States for many years.

INTERNATIONAL HATRED IN THE OLD WORLD AND IN THE NEW

HERR ERNST VON WILDENBRUCH, a name Carlyle might have invented, a poet of Berlin, whom the Emperor has honored, in a recent article expressed the hope that Germany will join with the United States in maintaining the Monroe doctrine. "The greatest struggle of the twentieth century," he declared, "may be a contest of the Germanic race against Latindom. Germany started the struggle in 1870 and America continued it in 1898. It is the inevitable strife of the Germanic races against the Latin races, which must continue until the Germanic race is supreme. In the struggle," which he hopes will next take the form of extending the authority of the United States over all Latin America, "no German can be in doubt as to where his sympathies and active aid should go."

This is a frank bit of barbarism, which is not as untrue as it is undesirable. But it is a feeling much stronger in the Old World than in the New. There is something in the dominant feeling in the United States that may perhaps be called a prejudice against the Latin peoples; but it is not a race prejudice nor a political prejudice, but rather the feeling of impatience that the economically efficient man has toward the economically inefficient. There is not the slightest reason to fear that the people of the United States will ever have such a hostile attitude toward the people of South America as the Germans and the French have toward one another. There is no inherent animosity, nor animosity of any sort; and the influence of trade, which is strong, is constantly to bring a better understanding. The German poet harks back to the pre-democratic era, and he will find no response on this side the Atlantic.

THE INSTRUCTIVE ASPECT OF COMMERCIAL FAILURES

THE elaborate study of commercial failures, extending over a period of twenty-seven years, made in *Dun's Review*, shows a remarkable—indeed, an almost incredible—diminution of the relative importance of failures to the volume of business. If the liabilities of failed commercial enterprises were shared by all the other commercial enterprises in the country, the loss of each would have been less than \$100 last year.

The defaulted indebtedness was only ninety-nine cents on every \$1,000 of solvent payments made through clearing-houses. These figures are only of failed merchants, not manufacturers nor banks. The smallness of the losses caused in the commercial community by mercantile failures is, therefore, not a heavy tax on the successful.

Still the absolute number of failures is great—more than 11,000, or about one per cent. of all—and the aggregate liabilities (not all of which was loss, of course) were last year more than \$117,000,000. The number of failures has increased during these twenty-seven years in times of bad crops, of panic, etc., as, for example, in 1893, when they were fifty per cent. more than in 1892. But the most interesting aspect of this study is the personal aspect of it.

And yet the personal aspect of it cannot be made very clear by any statistical study. Although the immediate and assigned causes for mercantile failures can be set down in columns—such as extravagance, incompetence, lack of capital and dishonesty—most of these are some form of deficiency in character or in ability. The specific instruction that can be got from this list of causes is little. Yet every failure is an instructive warning to those who can find out its real cause by a knowledge of the personalities involved; and no very instructive study of them can be made in any other way. A personality in some way defective is behind every one of them.

ABOUT THE SIZE OF FAMILIES.

IN an argument for a shorter college course and for graduation at an earlier age President Eliot, of Harvard, showed in his latest report that the graduates of the university "do not reproduce themselves." Twenty-eight per cent. of the members of six classes that had been out of college twenty-five years or more are unmarried, and those who have married have, on the average, only two surviving children, "so that the married pairs just reproduce themselves on the average." And he added:

"It is probable that the regrettable result is due in part to the late postponement of marriage on the part of educated young men, a postponement which the protracted education now prescribed for men who enter the learned and scientific professions makes almost unavoidable. The young physician,

lawyer, engineer or architect is now fortunate if he marries at twenty-eight or twenty-nine, whereas he should have married at twenty-five or twenty-six. To make earlier marriage possible is one of the strong inducements for bringing to an end the school course at seventeen or eighteen, the college course at twenty or twenty-one, and the professional training at twenty-four or twenty-five."

It is pretty well established that the time of marriage is deferred also in what may be called the upper working classes by the increase in the number of young women who can support themselves in the greater variety of pursuits now open to them, and that the number of children for each married pair is becoming gradually smaller. That there is a relative diminution of the offspring of native Americans in some rough proportion to the education of the parents is obvious. This is what President Roosevelt in a recent letter denounced with characteristic emphasis as "racial suicide."

These two causes of a low birth rate are very different. In the case of women who decline to marry or who postpone marriage because they are economically independent, the social damage is perhaps not a damage at all, but a benefit. They simply refuse to marry for purely economic reasons; and when they do marry they are likely to marry more satisfactorily. There is a certain social loss here, but it is doubtful whether it be as large as it might seem.

The case of cultivated men who marry late or do not marry at all is different. They are often mistrained men—self-conscious and unsocial. It is doubtful if society would gain by their marriage. To put it bluntly, such men are socially not worth reproducing. The very fact that they abstain from marriage is the best proof that they are not normal social units.

It is easy to become somewhat excited about almost any aspect of this subject, especially if one pay heed to the statisticians. But the saving fact is, Nature is very wise. We may easily set up false standards and assume that this class or that class ought or ought not to reproduce itself. But, without regard to our theories, in the main those who are best fitted for parenthood reproduce themselves. The trouble is that many who are unfitted also reproduce themselves. It is perhaps well that the selfish and mistrained are barren. The misfortune is that so many

clearly incompetent to rear children have so many. But here again Nature is wiser than we are.

It is unreasonable to become alarmed when one looks about and sees the great mass of American families consisting of three or four or five or six children. Perhaps it is well that they are not seven or eight or ten or twelve, as many families of two generations ago were. But the family of at least four children is yet common enough to hold us back from despair.

IMAGINATION AND HONESTY

A NEW YORK architect of talent and experience was recently reported to have said in a public discussion, "I would rather have a man with imagination coupled with dishonesty than a man with rectitude coupled with stupidity." And then to clench his meaning by a concrete example, he added: "The people of New York owe Tweed a great tribute. It was his imagination which gave us Riverside Drive, which is the most beautiful spot in the city. He may have been corrupt, but he was practical."

This is a sentiment not uncommon among men of culture keenly interested in art, and especially among those who are interested in art provided at the public expense. Your honest man in office, who feels that he is spending the money of others and who is perhaps a better judge of morals than of architecture and landscape effects, often seems slow and dull to men to whom lasting beauty is more important than temporary economy. But the sentiment is not a sound one, nor is the method of securing improvements by recklessness a proper one.

The real cause of the sloth with which public art moves is the difficulty of putting men who have imagination in authority—in local, or State or national life. Political methods and the routine of public duties do not appeal to them. But for that matter, men of imagination are hard to find in private life—even in the artistic professions.

DOES POVERTY HELP CHARACTER?

A RECENT eulogy of Lincoln by Ex-Governor Black was the most successful after-dinner speech of the season in New York, judged by the impression it made on the audience. The impassioned tone that

touched their hearts may be understood from this brief passage:

"It is not wealth that counts in the making of the world, but character. And character is best formed amid those surroundings where every waking hour is filled with struggle, where no flag of truce is ever sent, and only darkness stays the conflict. Give me the hut that is small enough, the poverty that is deep enough, the love that is great enough, and I will raise from them the best there is in human character."

No one is to be envied to whom this does not appeal. Yet is character best formed by the struggles of poverty? Washington did not know cramping poverty. He had fair schooling for the time, powerful connections and aristocratic associations. The toil that he subjected himself to in youth was voluntary. Another Virginian, Robert E. Lee, was born to wealth and social distinction. Such a list could be made as long as the list of great men who came to distinction through poverty. The moment we commit ourselves to a sweeping generalization on either side of such a controversy, we find as many facts to overthrow it as to support it. It is neither poverty nor wealth; it is discipline, it is concentration, it is work—these and other things make the complex thing that we call character. Heredity may have much to do with it. Surely it is not poverty alone. Else how numerous would be our heroes!

THE SMALL CIRCULATION OF NEW BOOKS

THE sale of several hundred thousand (say, from 100,000 to 600,000) copies of several novels is every day commented on as something extraordinary. If a book have qualities that commend it to 100,000 persons, these same qualities would commend it to twice or thrice or six or eight times as many—if the publishers and booksellers had machinery to find them.

For the machinery they have is the bookstores; and a very small proportion of the population lives within reach of bookstores. Comparatively few new books are sent by mail. There is apparently no practical way to make bookstores as numerous as grocery stores. Bookselling does not naturally ally itself to grocery-selling, and books alone do not yield a large enough income in many small towns and villages to reward energetic shopkeepers.

The book-agent is yet the best distributor

of books. But, as a rule, he does not distribute new books. There is a single publisher in New York who sells, through agents, more sets of books every year than any publisher sells of any new novel. For the American home is yet by no means filled with books. Few, outside the cities and larger towns, have as many books as they wish or can afford. The market is practically unlimited, if it could be reached; and the art of bookselling is yet probably in its unorganized infancy.

In proof of such an opinion, consider the circulation of the most popular magazines; for they are distributed, as books cannot be, at a cheap rate of postage. One periodical has reached the sale of more than a million copies a month. It has no quality of popularity that certain books do not or might not have. The chief difference is the advantage that the periodical has in its method of distribution.

If the subject be rightly understood, then, the wonder is not that certain novels reach editions of 100,000 copies or 300,000 or 400,000, but that they do not reach even larger editions, as they will in the future.

DOCTOR J. L. M. CURRY

THE death of Doctor J. L. M. Curry, successively member of the Provisional Confederate Congress and of the Confederate Congress, teacher, preacher, Minister to Spain, and agent of the Peabody and Slater funds to further education in the southern States, closes a career of unusual versatility and usefulness. Popular education in the southern States owes him the debt that every great movement owes to its able agitators and pioneers. He had the apostolic temperament, and he made more speeches to further the cause he served, perhaps, than any other man in the country; and his sincere and attractive character brought to him as many friends, of high station and of low, as any man now living can boast of.

OPERA IN NEW YORK

AT the Metropolitan Opera House in New York are heard the greatest singers in the world in the greatest operas. The coming of a new manager, therefore, is an occurrence of both financial and musical importance. Mr. Conried has succeeded Mr. Grau, and the promise is of evenly balanced and still more noteworthy performances.

FRANK NORRIS

BY

W. S. RAINSFORD

RECTOR OF ST. GEORGE'S, NEW YORK

WE need today men who can see, who, seeing things and men as they are, can still firmly believe—believe in the general soundness of life, the "worth-doing" of it all. And still more, we need men who can put down accurately what they see sanely. Such a student, believer, artist was Frank Norris.

He has left us in the very morning of his life. He has gone before he struck the stride of midday marching. The best he has given had promise of still better work. But he lived enough, and put enough life into his line, to give notice to all that he is of those who, even in youth, are content with nothing less than to see life sanely, and to see it whole.

The honesty, the bravery, the faith of the man, all live in his work. The pity of it, that time was given to him only to make a beginning. Frank Norris's work rings true—always true. There is not one unmanly or unhealthy note struck. He takes it for granted that ordinary people, if we could only really see them, are interesting enough to write about, yet he never knows a trace of the sordid.

It was my privilege to be counted among his friends for years. I seldom have met so lovable a man. He had unquestionably great dramatic power. He believed with all his soul in the future of democracy, and ever and always he tried to serve his brother men.

WHENCE COME OUR IMMIGRANTS

AN INVESTIGATION OF THAT PART OF RUSSIA FROM WHICH A
LARGE NUMBER OF IMMIGRANTS COME TO THE UNITED STATES

BY

MAJOR W. EVANS GORDON, M.P.

MEMBER OF THE ROYAL COMMISSION ON ALIEN IMMIGRATION

ENGLAND, of course—and America as well—attracts foreign elements from all parts of the globe. If a line be drawn from Kustendjeh on the Black Sea to Libau on the Baltic, and another from Kalisch in Poland to the easternmost point of the Province of Ekaterinoslav in Russia, these lines will traverse the length and breadth of the vast area from which comes a mass of immigrants whom English and American population must assimilate. England's doors are wide open to these people, and many thousands yearly pass the test of the immigration laws of the United States. The slums of Vilna and Warsaw, the ghettos of Lemberg and Galatz, the remote villages

in the Provinces of Minsk and Tchernigov, all send their quota to swell the ever-rising tide.

As a member of the Royal Commission on Alien Immigration, I have thought it most important to investigate this question on the spot, and accordingly I spent the last Parliamentary recess in visiting the homes of all our different aliens. I propose to tell here exactly what I found.

I reached Dvinsk, my first halting-place in the Russian Pale, on a mournful rainy Saturday morning. Leaving the railway station, with its luxurious restaurant and many comforts, one stepped into another world. Three miserable droschki's, ghosts of the smart

St. Petersburg carriages—the horses mere bags of bones—the drivers huddled bundles of rags with metal numbers on their backs—stood steaming and dripping in the rain and a sea of mud. Beyond the mud a rotting wooden fence, and then some tumble-down wooden shanties, inhabited apparently by a few melancholy women and pigs. The station, as often happens in Russia, was three miles from the town, and the drive gave me my first impressions of Russian country roads. The crazy carriages bumped over patches of cobbles and plunged axle-deep into pools of unfathomable black mire. After twice breaking down, we arrived in the town. The main street is not disagreeable to look at; the houses are stucco-fronted, with sides of unpainted brick, or wooden bungalows of the familiar Russian type. The roadways are laid with cobblestones and the footwalk is of planks. The inn looked better than I expected, but smelled considerably worse. I recognized a smell I remembered in the slums of Calcutta and Bombay. The rooms were decent and clean. The decoration was early Victorian, the furniture upholstered in dusty red Utrecht velvet, and the sanitary arrangements prehistoric.

The town is said to have 80,000 inhabitants, and some 70,000 are Jews. The persecuting May Laws of 1882 drove many of these from the villages and smaller towns into the larger centres of population, hence the high proportion of Hebrews to be found in the place; hence also much of the misery and poverty from which these poor people suffer. The preponderance of the Jewish race was at once apparent, the Sabbath sending the whole place to sleep. Not a shop was open, not a stroke of business being done. The only sign of life was in front of the synagogue; there a large crowd of decent-looking folk were holding their church parade, promenading up and down.

The town is situated on the Dvina, a mighty stream in full flood when I saw it. On its banks is a beautiful boulevard. But the place was deserted and depressing at that time. An aged Jew, gazing at the flood and wreckage with mournful eyes, was the only creature I met. I talked with him, remarking that the flood was working sad havoc.

"Not sad," said he, "but blessed. The world has been too wicked of late: it will be purer and better when the water subsides."

Not understanding, I asked him to explain. "The wars," he said; "the wars in China and Africa. What wickedness! The Almighty is washing the sins of the earth away."

His point of view was quaint and a little touching. He seemed to regard the flood as a sort of divine flushing of mundane drains.

On the next day, Sunday, I was able to see the town in its business dress, though the Russian law forbids the opening of shops by the Jews till 1 p. m. on the Christian day of rest. After that hour the markets were in full swing, crowded with country folk and soldiers from the cantonments near by. All were eagerly doing business with the Jews. A peculiar feature was that the soldiers were mostly sellers and the Jews buyers. Strips of embroidered Russian cloth, old boots, uniforms and a mass of miscellaneous odds and ends were the articles which the Czar's "Tommies" had for sale. Every article was the subject of a protracted bargain, and each group of soldiers in their white jackets and caps was surrounded by a crowd of Jews in long rusty black coats, with the characteristic stoop of the shoulders and flowing beards. Round the markets were many drinking and gambling dens and disorderly houses, into which I saw the soldiers being decoyed and dragged. The police gave me a bad account of the morality of the place, and at night, too, hospitable invitations were extended to me at every second door. No doubt the crowding of the Jewish population into the towns has led to a general deterioration both moral and physical. The struggle for life is a desperate business for many of them, and scruples diminish in proportion to its severity. Whatever the cause, sexual immorality is prevalent in towns like Dvinsk. The house accommodation is poor and squalid, but there is always light and air and space, and considering Dvinsk from the purely residential point of view, I personally should prefer it to some streets I could name in towns at home.

To those anxious to see for themselves what a Russian ghetto is like at its worst, I would recommend a visit to Vilna. From the fort which crowns the hill in the middle of the town, the hill up which Napoleon rode in 1812, when Vilna was the centre of his advance upon Moscow, one of the most beautiful views imaginable is obtained. The town lies at your feet, with its clustering red

roofs and hundred gilded domes and spires and cupolas; the glittering river and lovely wooded country, stretching away for miles, make an unrivaled picture—and it is difficult among such surroundings to realize the squalor and misery which the place contains. There are said to be some 80,000 Jews here—not, by any means, all poor. By far the greater part of the trade, and practically all the shops, are in their hands. But the submerged tenth is submerged indeed.

The Ghetto is a seething mass of humanity. Many of the streets and alleys are so narrow that the pavements almost touch. At intervals throughout their length are arched gateways leading into courtyards round which the dens and cellars in which the people live are clustered.

I spent a whole day in visiting them. In the corners of the court one would find a wooden trough into which all the refuse of the houses was thrown. The stench from these receptacles filled the whole air. The stucco walls were blistered and rotting as if infected by the poisonous atmosphere within. Inside, the people were crowded pell-mell, regardless of health, age or sex. In one room I found a lunatic in the middle of a family of young children. I was followed as I walked by a crowd of haggard, anxious, careworn people, staring at me with mournful eyes. Some openly begged alms, others had trifles for sale. Many seemed to pass their time in the synagogues, rocking and chanting themselves into oblivion of their miseries. I came across several who had been to Whitechapel, and had been sent back, I suppose, as fit for nothing. One man with a large family wished to make another trial of England, and asked me, of all people, for money to help him to get there. The situation was not without a certain pathetic humor.

The slums of Vilna, it is evident, are not a desirable recruiting-ground for the East End of London or the East Side of New York. Until a year or two ago the poor Jews found plentiful employment in the building and allied trades, in which there was a "boom," but this has been followed by a "slump," and the unemployed are proportionately as numerous as they are in London. At such times their thoughts turn to America and England; dreams of high wages and regular work fill their minds; anyhow, it will be something new, and at the worst they will

be sent back. And so they arrive in the Thames. Unless they have health and means of earning a livelihood, the United States are closed to them by strict legislation—as are the English Colonies. The well-to-do Jewish community in Vilna does its best, and the place is full of admirable charitable institutions and schools. But here, as in all other great towns, there seems to be a residuum which is never reached, or, if reached, is never permanently benefited.

There are other towns, however, in the Pale where things are better. Pinsk is one of them. Here Jewish skill, labor and enterprise have been combined to good purpose. It is a picturesque place. The streets of wooden houses and cottages are lined with trees. There are a quaint old church and seminary, and the river banks are full of life and color. The population is 40,000, of whom 37,000 are Jews. This disproportion, as in most of the towns of the Pale, would have resulted in congestion in all employments open to Hebrews had it not been for the energy and enterprise of certain leaders of the community such as Messrs. Lourie and Halpern, who, by starting factories, have succeeded in profitably utilizing the labor of their co-religionists. In Mr. Halpern's match factory for instance, 1,500 hands are employed. Here you can see a huge log go in at one end and come out half matches and half boxes at the other. From first to last none but Jewish hands touch it, and the whole process, from rolling and sawing the heavy timber down to deftly pasting the labels round the boxes, is done by them. In all there are eighteen factories in Pinsk, employing between 4,000 and 5,000 hands. If only similar industries could be started in other centres the great and tragic Jewish question in Russia would be well on the way to be solved. I am certain that the only true and permanent solution will be found on these lines. The idea that Jews will not engage in manual labor has long since been exploded. Twenty-five years ago it was based upon fact. The venerable Mr. Lourie, who throughout his long life has been struggling with problems connected with his people, told me that he well remembered the time when no Jew would even consider working as an artisan or entering a Christian school. They still much prefer to become employers or traders; but circumstances have brought about a great

change, and they eagerly accept employment in factories when opportunity offers. As to the schools, after the first plunge was taken the rush for education was so great that the Russian Government became alarmed and closed the doors to all but a very small percentage of Jewish children. It may be that, in the course of the development of his industrial policy, M. De Witte, the great Russian Minister of Finance, will find it advantageous to use the great mass of intelligent and industrious labor which the Jewish community provides ready to his hand and which now runs to waste. I hope so. Numbers of first-rate mechanics and artisans are being turned out annually by the Jewish technical schools, and for them the whole of Russia, with its vast field of employment, is open. There is no necessity for them to emigrate. The Jew, moreover, is not handicapped by the one hundred and eighty-five State holidays which an orthodox Russian workman has to keep. But, apart from the adoption of a more enlightened policy by the Government, much might be done by the Jewish community themselves. The vast sums expended upon colonization—the tens of thousands of pounds annually thrown away in a senseless and pitiful game of battle-dore and shuttlecock, in which the unemployed Jews are driven backward and forward between Russia and Galicia on the one hand and England and America on the other, could, I believe, be far better and more usefully employed in providing work and occupation for the people in their native land. The idea at the back of this movement is that, removed from the restrictive influences of Russian laws, these people thrive and prosper. But this idea has only been to a small extent realized in practice. The bulk of the poor emigrants here become and remain poor immigrants and emphasize the little-known truth that the Jews as a people are the poorest race of the earth. From 75,000 to 100,000 members of the community in New York, says the report of the United Hebrew Charities for the year ending October, 1901, "are unable to supply themselves with the immediate necessities of life, and are dependent on the public purse."

In Pinsk there is plenty of poverty—the poverty which is common to all large towns in every country—but nothing hopeless or abnormal. The 5,000 hands in regular em-

ployment leaven the mass, and the homes, though humble and very poor, still in several instances show signs of comfort and comparative prosperity.

From Pinsk I made a tour into the interior of the country. I was anxious to see the condition of things in the small towns and villages. The enterprising Jews have started lines of steamers which ply on the numerous streams that intersect the country and add to the prosperity of the town. On one of them I took a passage.

It was a market-day, and the river was crowded with primitive boats and dug-out canoes laden with many kinds of produce. The scene was curiously Eastern and reminded me strongly of parts of Lower Burma. Our boat was crowded with Russian peasants and Jews. I may here say that throughout my travels I was unable to discover any trace of ill feeling between the two peoples. In the villages, Jew and Gentile live harmoniously together. The Christian peasantry are engaged solely in agriculture; all other employments and handicrafts are conducted by Jews. Their capacity for business and organization is, on the whole, I think, a benefit to the peasantry. It is the Jews who find a market for the produce of the land, and every village and townlet in the Pale contains an agent or correspondent of the big exporting firms in Riga, Libau or Odessa. It is this elaborate organization which gives rise to the complaint so often heard in Russia, that the Jews are the exploiters of the peasantry. I have no doubt that in many instances the moujiks do fall an easy prey to the superior intelligence and astuteness of their Hebrew brethren. At the same time, it is, I believe, a fact that the general condition of the Russian peasants in the region where Jews are allowed to reside is superior to that which obtains outside the allotted provinces.

Any one undertaking a country tour in Russia must be prepared to rough it. The only available conveyance is the ordinary country cart—a wooden frame on four wheels. The roads are partly sand or mud and partly logs of wood cut into lengths and thrown upon the ground. A few miles of the latter leave the traveler in much the same condition as he would be after a severe flogging with a heavy stick. The inns, too, are queer places—in one I spent the night on the floor, surrounded by a zareba of insect powder,

successful attacks on this work being maintained throughout the night. The people are simple and good-natured, but sunk in the depths of ignorance and superstition. In the whole country I passed through there was not a single school or doctor. In one village, Gorodno, an epidemic of scarlet fever was raging, and the children were dying like flies, without the least prospect of any medical assistance! It was curious to think that here, forty-eight hours from Berlin, one was in the midst of conditions far more backward and less civilized than are to be found in the remotest corner of our Indian Empire.

It would take too much space to describe all I saw in Poland, Galicia and Rumania, and I must therefore confine myself to a few points. There is one feature common to all, namely, the tendency of the Jews to congregate in the towns. In the fifteen provinces of the Pale they are obliged to do so by law. In Poland and Galicia no such legal obligation exists, yet it is in the towns we find them. In Warsaw alone some 300,000 Jews have to make a living, and in Lodz, the Manchester of eastern Europe, there are nearly 150,000. In the latter town the overcrowded and insanitary conditions under which the poor people live are appalling. One tall wooden house which I inspected was packed solid with humanity. I found people living in the apex of the roof between the tiles and the top ceiling. I had to crawl into this noisome receptacle on my hands and knees and to climb a ladder to reach it. The police had interfered, I was told, but the place was occupied again as soon as the backs of the authorities were turned. Such incidents are reproduced in the East End of London. Lodz is a great spinning and weaving centre, and many of the factories are owned by Jews. I was surprised and sorry to find that they employ hardly any Jewish labor. There seems to be a difficulty in connection with the Sabbath and the Sunday, and keeping the machinery idle for two days in the week instead of one. This objection has been overcome in Warsaw, however, where, in Mr. Finekin's lace factory and Mr. Polakiewitz's tobacco works, Jewish and Christian hands are both employed with happy results. These establishments left a very agreeable impression on my mind. Every care is taken of the workpeople, even schools for the children being provided on the premises. The wages are small judged by an

English standard, from 6s. to 15s. per week being the average, but living is cheap and the wants of the people few, and they are infinitely better off in every respect than persons of a similar class earning double the money in London or New York.

In Galicia the condition of the Jews seemed to me worse than in Russia or Poland. A fatal apathy and bigotry seemed to have settled upon the majority of the Hebrew race here. They are divided into factions, and engage in incessant quarrels with one another. There are no laws to oppress them, but they are extremely unpopular with their Christian fellow-subjects, and as a class are wanting in those qualities of push, enterprise and desire for education for which their co-religionists elsewhere are so conspicuous.

A considerable portion of the land in Bukovina and Galicia is owned by Jews, who are, moreover, said to hold mortgages on many of the remaining estates. But there are few manufacturers, and a great part of the Jewish population seems to have nothing to do. The housing conditions were not bad—infinately superior to what I had seen elsewhere, or to what I can see any day in my own constituency in London.

The Rumanian Jews stand head and shoulders above their Galician brethren, and, where not interfered with by the law, do well for themselves. I came across many robust working-men who presented none of the painful ghetto characteristics. Nearly every house in a Rumanian town is roofed with tiles, and this industry is exclusively in the hands of the Jews. The work needs agility and involves much exposure. It was curious to see a church being roofed in this way by Jewish workmen who were accompanying their labors by chanting a Hebrew psalm.

The general conclusions I arrived at regarding the houses and life of the Jewish people whom I saw on my journey to the homes of our aliens, are that their standard of existence is a much lower one than obtains in this country, their food is less in quantity and poorer in quality—meat, for example, is seldom eaten, and a fowl would never be killed except in cases of serious illness or dire necessity. Their wages are lower and their requirements fewer and more simple. In the large towns the housing conditions are deplorable, and sanitation as we understand it is unknown. In the villages, where the

number is restricted and no newcomers are allowed to settle, the lot of the Jews is by no means bad. Many of them are poor, but the whole population is poor, and their life is no harder than that led by people similarly placed in England or Scotland or any other country in Europe. I have said enough, however, to show that a large part of the

recruiting-ground of our aliens cannot be expected to produce any of the qualifications of good citizenship—a fact keenly appreciated by the United States, the English Colonies, and, most striking fact of all, by the authorities of the Jewish settlements in South America, whose recruits are filtered once, twice and thrice before being accepted.

THE FLAT-DWELLERS OF A GREAT CITY

THE TYPICAL EXPERIENCE OF PEOPLE WHO LIVE IN THE BIG NEW YORK APARTMENT BUILDINGS—THE ENORMOUS GROWTH OF APARTMENT-HOUSES—HOW THEY CONTRIBUTE TO THE INDIVIDUAL LIFE AND THAT OF THE COMMUNITY

BY

ALBERT BIGELOW PAINE

(Illustrated from photographs taken by the author)

A SHORT time ago the tenement dweller—a person whose habitation was bounded on the top and bottom by other habitations, and who sometimes found it cheaper to move than to pay rent—was scorned by the house-dweller, who had upstairs, downstairs and basement, secured for a term of years. Today it is said that nine-tenths of the population of Manhattan Island are dwellers in tenements, and that one-half of them move from one to six times yearly. I have heard of a family that moved three times in one month.

The word "tenement" is no longer popular. We hear of "flats" and "apartments" now, of rentals as high as \$6,000 and even \$10,000 a year, but the law makes no distinction. Every house, however big and expensive, which contains layers of inhabitants, all duly recorded, labeled and pigeonholed, is a "tenement."

The rise and progress of the New York City "flat-dweller" presents a sociological object lesson. It begins, as likely as not, with a young man from the country. He has secured employment in the metropolis at wages which seem liberal, and with good prospect of advancement. Almost immediately he begins to plan for a home. He cannot afford a house. The Sunday papers

are fairly overflowing with offers of flats—"Three light rooms and improvements at \$20 and upward; steam heat." On Sunday afternoon he climbs numberless flights of stairs to look at certain tiny nooks. Within the year he has brought his bride from her country home to become a mite in a great human hive—a flat-dweller in Harlem.

When the new things are all brought in and all placed, and hung, and dusted for the last time, the two march back and forth from one end of their play-house to the other—being careful, of course, not to upset any of their wedding presents. Then they go to the window and look out over wide expanse of housetops, or down vistas of flapping laundry, and are happy. They will probably never be quite so happy as that again.

They begin to move at the end of the third month. For one thing, the apartment is too small. One doesn't need much in a flat, but one must have two or three chairs, and perhaps a stand-table, and then there are the wedding presents. The house is too new. In a perfectly new house the windows and doors and drawers are likely to stick, that the plumbing and heat supply have not been tested, nor the janitor service duly seasoned. Then the stairs—four long flights are really too many.

The new rooms are larger, and more expensive and nearer the ground, but they are also darker and dirtier, and perhaps occupied by certain elusive "tenants" who forgot to move, and whose rights and powers of occupation are not easily gainsaid.

The well-balanced country girl shudders at these things. Cleaning preparations, corrosive sublimate and various cimicides are presently ranged along the kitchen shelf. The fight has begun—the everlasting warfare that rages night and day between the New York City flat-dwellers and the voracious hordes of the lower animal kingdoms. Through the dim watches of the night croton-bugs, which she at first takes for young roaches, file across her kitchen ceiling, or marshal in solid phalanx down her stationary tubs. Mice scramble in the walls—rats clatter through her 'inware.

They must have a better apartment, a bigger apartment, and a lighter apartment, even if they have to pay half their income to get it.

They are more careful this time in their selection. They consider north and south exposure, roof or pulley-line accommodations for laundry, appearance and probable temperament of the janitor. They compromise at last on another new house, for after all cleanliness is the first consideration.

Of course they have bought more things by this time even though none of the six rooms can show a measurement of more than ten by ten, while the "girl's room" off the kitchen is a mere closet. It is winter when they move, and the steam-supply does pretty well, except when the wind comes across North River and the mercury falls to zero. On days like these the radiators become unambitious and forgetful. Discussion with the janitor is unavailing. He, or she, insists that there is some mistake—the woman on the third floor is complaining of the heat. They do not press the matter. They have discovered that the janitor is absolute. Also that he receives no pay but his rent—sometimes not all of that. His life is a never-ending round of ashes and condemnation.

Other peculiarities develop. A family moves in overhead, with a trio of boys that clatter up and down, like a Texas herd on a stampede. Across the way another family has a mania for cooking cabbage, while on the first floor onion stew has a daily place on the bill of fare.

Meantime, the young man has had an increase of salary. With the coming of the spring they move again and for a time occupy "nice, quiet apartments near the elevated railway." It is a pretty suite—better and more expensive than any they have occupied heretofore. The janitor, too, is rather cleaner looking than usual, and more accommodating. The doors swing on their hinges; the plumbing and the pulley-line are in working order. They are quite happy until with warmer weather and open windows the crash and clatter and jangle of the elevated and the trolley make days of disordered nerves and nights devoid of rest.

They move twice during the next year acquiring knowledge with each migration. They learn, among other things, that the schedule of "flat" prices is adjusted to the penny—that when a good-looking flat is to be had at what seems a low price there is some drawback that will develop sooner or later. It may be the noise, it may be dampness, it may be the neighborhood. It is certain to be something, and the flat-dweller gets precisely what he pays for, neither more nor less. They learn also that there are houses of the better class, such as they now select, that do not "take children." Neither can they move now at will, for in the better places they are obliged to sign a lease for a year, and must either sublet or serve out their time. Often they do the former, for apartments are always in demand, and at many of the better houses there are long waiting lists of would-be tenants.

The young man from the country prospers. He is industrious and energetic, and raises of salary are frequent. Flight by flight he ascends the apartment scale, until finally he is able to enter a vestibule adorned by palms and Turkish rugs and be lifted to his corner of a vast domicile in an elevator. His rental is from \$1,200 to \$1,500 a year at this stage, and he is not likely to move until his term expires. The janitor problem is no longer difficult. He is called a superintendent now, with a corps of efficient assistants, all decently clad and properly paid. Heat is usually to be had from the radiators, and when these fail there are always the gas logs.

He is high enough up in the world to solve the light problems, at least until some other sky-scraping apartment uplifts beside him. Then he will move on. He will move anyway.



A HANDSOME APARTMENT HOUSE ENTRANCE



APARTMENTS NEAR THE ENTRANCE TO CENTRAL PARK



ONE OF THE MOST MODERN OF APARTMENT HOUSES



FLAT-DWELLERS HERE MAY HAVE A GLIMPSE OF THE HUDSON



APARTMENTS WHICH LOOK OUT ON THE TREETOPS OF CENTRAL PARK

when his lease expires, for he can pay a rental of \$2,500, and he has learned that it pays to do so. It is true, his salary is only double that, but he has discovered that to the flat-dweller on Manhattan Island it is not the table, not the bank account, but the apartment that is "the thing."

The "family" goes home in the summer and the former country girl "holds forth" on the joys of apartment life—tells of its convenience and its luxury—of the cold-storage refrigerator that freezes ice-cream by merely turning on the current; the long-distance telephone, the row of electric buttons that at the slightest pressure will bring almost anything under the sun. She tells of these things to her wondering hearers—tells of them triumphantly, not to say boastfully—but now and again when she is alone her eyes wander about the great sunlit sitting-room with its wide fireplace, then to the whispering trees, long waving clothesline and clambering vines without, where the "brood" is laughing and playing and shouting for sheer happiness. For a moment she forgets to feel triumphant, and remembers the



OPEN FIRES ARE POSSIBLE

eyrie habitation with its dizzy outlook on smoky, wash-hung roofs, its gilded radiators,



AN APARTMENT INTERIOR

Photographed by K. F. Turnbull

its tessellated halls, and its clacking elevator, with something that is almost like a sigh.

Perhaps—if they are wise enough, and care enough for the children—they will give up apartment life in the end and move to the suburbs. They will take a house there—one as much like a flat as it is possible to find—with gas range, stationary tubs, electric bells and sham fireplaces. Or if the fireplaces be real, they will, as likely as not, put gas logs in them, and in other curious and amazing ways endeavor to simulate the apartment house plan and atmosphere. They have learned the profession of flat-dwelling too well to live it down in a day, or in a year. Every trip to

of which still survive, though most of them have given way to make room for skyscrapers, and for other flat-houses of greater proportions but of smaller rooms and smaller respectability. Also, many residences were converted into apartments, and among them are still desirable habitations for persons of quiet tastes who are willing to forego a few "improvements" for the sake of large rooms, closets, and real open fires.

Apartment building became more and more popular. Once the wave got started it went rolling to the northward. It billowed around Central Park. The heights of Harlem were inundated and swept away. Across



A DRAWING-ROOM IN A FLAT

Photographed by R. F. Tard

the city is beset with temptation—every fine, new apartment house is discussed and perhaps examined. They are likely to return and end their days in one.

Apartment building of the better class began in 1869 when Rutherford Stuyvesant put up the buildings at Nos. 140 and 142 East Eighteenth Street, two substantial and roomy houses which, in spite of their location, still rank among the best of the older New York city apartments. The success of the Stuyvesant buildings was followed by the building of a score of other apartments, some

the river and up the Bronx raged the tenemental tide. Morrisania, Melrose and Tremont were overwhelmed, their individuality lost amid a myriad of square, five-story, contract-built structures—put up, pushed up, thrown up by anybody and everybody who could get hold of a bit of land and a company willing to make a loan.

Of course they were built too fast and too poorly. Rentals cheapened and houses began to fall to pieces within a year. Landlords became poor. The more houses they had the poorer they became. The poorest



PLEASANTLY SITUATED ON MORNINGSIDE PARK



THE OUTLOOK FROM THE FRONT OF A FLAT

man I ever knew owned a block. I gave him a pair of my old shoes.

Perhaps it was as well that the houses were poorly built. For now they are coming down. Another wave has set in—buildings ten, twelve and sixteen stories high, with elevators, and the old five-story drift is being pushed aside to make room. Seven years ago there was but one elevator apartment house above Central Park—the Monterey. Today there are many—wonderful towers of steel, stone and stucco, each capable of sheltering a good-sized village.

The Ansonia, just completed, at Seventy-second Street and Broadway, is the latest and largest apartment house in the world. It is seventeen stories high, the top story being used exclusively for servants. It has sixteen elevators, more than 300 suites of rooms, and 1,800 people may be luxuriously sheltered within its fire-proof walls. There are dining-rooms upstairs and down for those who do not occupy housekeeping suites, a grill-room and palm garden; and the whole is illuminated by 18,000 electric lights. Business houses of every sort, from a bank to a barber shop, are on the main floor, while throughout the building are pneumatic tubes, dumb-waiters, push buttons, long-distance telephones, and means of re-



THE OUTLOOK FROM THE REAR OF A FLAT



THE ONLY YARD IS THE ROOF

frigeration as well as heating, so that winter or summer an equable temperature may be maintained. The Ansonia cost the owner, W. E. D. Stokes, nearly \$4,000,000, and its yearly rentals range from \$500 for a single room and bath to \$10,000 for a large double suite. It is a vast experiment in wholesale flat-dwelling that is attracting world-wide attention. Apartment houses, especially the finer ones, are a boon to those persons of social inclinations and no vast amount of capital. A cottage for the summer and an apartment for the winter is the solution of their problem, and the volume and swiftness of New York's social maelstrom has doubled and quadrupled during recent years.

I do not know how many apartment houses there are in Greater New York city. There are more today than there were at this time last week. A year ago there were more than 40,000 on Manhattan Island alone. Perhaps 70,000 would be a fair guess all told, counting up to five o'clock this afternoon. Rentals range all the way from \$5 a month for a wretched tenement hole in the lowest depths of the East Side, where



WHERE THE ELEVATED THUNDERS BY



MR. GEORGE McCANN

The oldest janitor in the oldest apartment house in New York

narrow, sunless houses seem overrun by a perfect tangle of fire-escapes, to \$500 a month for a marvelous ten-room suite with every luxury and convenience that whim can devise and ingenuity and wealth supply. But, whatever you pay, or wherever your suite may be located, you are still bounded on the top and bottom, and perhaps on the sides as well, by other suites occupied by persons whom you may not know or wish to know, yet



THE STUYVESANT

The oldest apartment house in New York

whose social events, domestic disasters and culinary economies may and do become an element and an influence in your daily life. A fairly decent apartment of seven small rooms may be had for \$40 per month with steam heat. Certain labor-saving appliances reduce the cost of living somewhat, so that flat-dwelling is rather cheaper than residence in a detached house. The rental becoming about one-half the expense. Perhaps the saving is more than made up by doctors' bills. Dark or half-lit suites—most of them are either one or the other—are not conducive to health, and it seems to me that a long period of flat-dwelling may result in the city's physical deterioration just in proportion as the apartments lack direct sunlight and pure air.

Whatever may be the physical effect of flat-dwelling, it is likely to mean artistic and, in some cases, even moral decline. No matter what his original tendency toward individuality of taste and a regard for the genuine things of life, the flat-dweller will at last accustom himself to accepting conventional plans and designs that are thrust upon him.

"Just tell me what color paper you want—green, blue or pink—and I'll fix it for you," I heard an agent telephone to a new signed tenant. "I know all the kinds. You needn't bother." The apartment in question yielded an annual rental of \$3,000. Doubtless the tenant did not care. A man who has worked up to a \$3,000 apartment has likely reached an artistic poise where he is willing to put aside all care and have the paper selected for him. He has grown to like whatever is supposed to be the proper thing.

At that point moral decline is apt to set in. You can't lose individuality and retain strict honesty. One of the foremost apartment owners in New York city—the promoter of the apartment house in which there are dining-rooms—assured me that some of his wealthiest tenants took silverware and glasses from the tables, slipped nuts and confections into their pockets, and that at the table-d'hôte dinner more than one man came down alone, and carried away enough in his pockets of bread, cakes, and even cooked birds, to make a dinner for his wife who stayed upstairs to save a dollar. Such is the moral degeneration that goes with *lincresta Walton*, gas logs, and a thoroughly artificial life.



THE ANSONIA

The largest apartment house in New York city

Photographed by Irving Underhill



IMMENSE APARTMENT HOUSES IN UPTOWN NEW YORK



WHERE APARTMENTS LINE BOTH SIDES OF THE STREET
The centre of Harlem flatland

The effect of flat life on children is bad. Their childhood becomes a medley of assorted and variously connected rooms, stair climbing, roof prospects, elevator and pavement associations. They have no real home—nothing to look back upon—their individuality is nipped and blighted by the frost of many moving-days. And they grow to like it—that is the worst. The prospect of mov-

ing and of a new flat is looked forward to somewhat as they anticipate Fourth of July and Christmas.

They grow to regard all nature from a "flat" point of view. A little girl I knew went into the country last summer and heard for the first time the tinkle of the bells as the cows came home at evening.

"Oh," she said, "I hear the ragman com-



APARTMENTS ON A STREET LEADING UP TO GRANT'S TOMB

ing!" The ragman who drove through her street had cow-bells on his cart. To her the cow-bells may always suggest the ragman. Such impressions are not easy to live down.

Of course the apartment house is the natural result of space limitations. For those who desire or are compelled to live on Manhattan Island there is no alternative. The island is small and it is full to the edges. Dwellings become fewer each year—lawns and gardens are forgotten. Within twenty-five years, at the present rate of building, there will be hardly a square foot of available ground that is not occupied either by a sky-scraping office building or by an apartment house. Then it will be simply a question of going up or down—higher and even higher into the air, deeper and still deeper into the depths below. Lawsuits will develop and test cases will be tried to decide how high up and deep down a title may extend, and what are the aerial and subterranean rights of way.

Meantime what of the poor—those who are too poor to go to the suburbs—too poor even

now to remain where they are? Will they be crowded down and still down into the depths to become at last a weird and ghastly race—the "molocks of Wells's 'Time Machine,'" or will the vast flat tops of the mighty houses of the near future be covered with their cottages—their clothes-lines, and their gardens—a development already suggested by the many drying-lines, some janitor lodges, and tubs of growing plants. I fear the latter idea is visionary. The top is "too good for the poor." It will be used for great glass-covered hot-houses, where artificial farms, warmed and enriched even in winter by the waste heat and vapors, will supply with food the vast artificial life below. The poor will go down and still down—the graduation from poverty to wealth will be an absolute and literal scale. Perhaps this is a long look ahead, and there again, as Frank Norris's Annixter would say, "Perhaps it isn't." Among the many problems of flat-dwelling life on Manhattan Island, perhaps the most important is the vital question of space.



AN APARTMENT HOUSE INHABITED CHIEFLY BY BARNARD COLLEGE STUDENTS

The Horace Mann School just behind

THE "ROOM" AT LLOYDS
Here the ships of the whole world are watched



LLOYDS

THE GREAT MARINE INSURANCE COMPANY WITH A SEA-WIDE BUSINESS
WHOSE RECORDS SHOW THE HISTORY AND THE CHARACTER OF EVERY
IMPORTANT SHIP AFLOAT AND THE RECORD OF EVERY MASTER
—THE ROMANCES AMONG ITS RECORDS—ITS INTERESTING HISTORY

BY

CHALMERS ROBERTS

PROSAIC modernity has left little romance in the life of the ordinary man who goes down to the city and toils. Commercial activity has stretched such a network of interests over the earth that few regions are now beyond the reach of breakfast-table bulletins. Only the sea remains the home of mystery, retains all the charm of uncertainty. And, therefore, those whose business is concerned with the sea have perhaps most of old-time romantic flavor in their lives. An unceasing war wages between the grim old monster and

the men who insure ships against its fury. How it must delight now and then to upset all their calculations, to force back the ever-advancing tide of man's mastery over it! For the story of Marine Insurance is one of constant conquest over the chances of the sea, of constant reduction in the risk taken and the rate asked. But even yet, until the day when Marconigrams flood the face of the waters and every ship has a spark-emitting masthead, the risk and mystery remain greater than in any other insurance underwriting. Modern statistical



THE TOP OF THE STAIRCASE AT LLOYDS

On the right is the entrance to the committee room, on the left to the sub-committee room, at the back to the luncheon room

returns have made it easy to compute the average of human life, but mortality tables for ships have not yet been constructed.

This is undoubtedly the oldest form of insurance. From the earliest times ship-owners have combined for the mutual protection of their constantly endangered property. Those earliest voyagers to distant seas, the Phenicians, practised a kind of bottomry. Before the master sent his small bark on a voyage to the edge of the earth he mortgaged her against her return. If she came back safely he restored the loan with a heavy premium. From that time until now marine insurance has been bound up with the wars, frauds and vicissitudes of commerce and is full of fine tales of adventure. It is particularly fitting that Great Britain, the very existence of which is bound up in the rapid movement of a large commercial fleet, should be the home of marine

insurance in its most perfectly organized form. For this form of protection against the chances of the sea may be said for all modern purposes to have been born in London. One may go further and fix its birthplace in the coffee-house kept by a certain Edward Lloyd in Tower Street in the seventeenth century. For, although there was little evidence that Lloyd himself engaged in any sort of insurance, he has given his name thereto and has become in fact a godfather or patron saint of marine commerce.

The early association between coffee-houses and marine underwriters is not to be wondered at, for these resorts became almost from their date of opening a general place of meeting for all men of business. The first on record is found in 1652, when a Turkish merchant named Hodges introduced the brown berry in this way and opened what contemporary chronicles call a "Kauphy



LLOYDS NEW BUILDING

THE CRIER'S ROSTRUM
The famous *Lutine* bell behind

House." And before the name of Lloyd occurs, notices and advertisements were to be seen showing that shippers and underwriters used the new taverns, particularly those in the city, as places for auctions of ships and underwriting against their possible loss or damage. The first mention of the name of Edward Lloyd is in an advertisement in the *London Gazette* in 1688. The advertisement reads:

"A middle-sized man having black curled hair and pock holes on his face is wanted for having stolen a number of watches. A reward of one guinea is offered for information as to the delinquent, and



LLOYDS POLICY ON THE LIFE OF NAPOLEON, 1813

those who would earn money are directed to apply to Mr. Edward Lloyd at his Coffee House in Tower Street."

Edward Lloyd moved in 1692 to Lombard Street, and it was here that he began the publication of *Lloyd's News*, a paper which contained intelligence from foreign countries and home centres. In fact, very little else is known concerning the man whose name has now been carried to the uttermost corners of the earth. Almost the only other record left of him individually concerns a dispute which he had with the House of Lords in consequence of some comments which he



WHERE THE SHIPS OF ALL THE SEAS ARE INBRED
Big John Wilson presiding at committee meeting

made upon a petition from the Quakers. In this encounter he appears as a doughty man, for when the noble Lords demanded that he publish a retraction of his statements he declined to do anything of the sort. He returned their demand with a reply that "Mr. Lloyd will print no more at present." And no more did he. It was thirty years later before his paper was revived as *Lloyd's List*, since when it has gone on uninterrupted to its present honorable age. Little further is known of its founder, but after his death the coffee-house kept its original name for many years.

It does not appear throughout the greater part of the eighteenth century that merchants and underwriters frequenting Lloyd's rooms were bound together by any organization. It was probably as a result of the enormous gambling crazes of the seventeenth century, so inseparably bound up with the history of insurance, that formal and final organization took place in 1771. But Lloyd's coffee-house played an important part in the long reign of insurance scandals and financial bubbles which make almost the whole of the eighteenth century famous in financial annals. In 1768 a writer in the London *Chronicle* declared that Lloyd's coffee house was the scene of all manner of illicit gaming, and that insurance had been developed into more or less fraudulent bets upon elections, on resignations of the Government, on the lives of distinguished people, and even upon the execution of certain well-known peers.

To look back briefly over this curious development of financial history we find that it was an important day when nearly at the end of the seventeenth century the son of an Edinburgh goldsmith escaped from the King's Bench prison in London, having been tried at Old Bailey for murder and condemned to death. The fugitive son reached the coast of France, and in the *Hue and Cry* which went after him his name was given as John Law and he was described as "A black, lean man about six feet high, large pock holes in his face and easily known by his high nose and his loud and broad speech." Although the description of this fugitive is not attractive, he seems to have been able to exercise wonderful influence over those of the highest birth and rank. He became the intimate friend and

counselor of the Regent of France, Comptroller-General of the Exchequer of the Kingdom, and the originator of the most gigantic financial imposture ever known.

Not only individuals but masses of people and nations must go mad at certain periods, for in no way else can be described the furious seething mass of people whirling around a group of needy speculators in the Rue Quincompoix, Paris, during 1718 and 1719. In these years Law and his Mississippi Company ruled everything. The disease proved infectious, for, leaving Paris, it came to England and found its culmination in the South Sea bubble. During this time, and in fact for a period of about forty years, the greatest scoundrels in England were starting insurance companies and selling shares at prices varying from a quarter of a dollar to \$5,000. At the time of the South Sea mania there were more than two thousand schemes afloat in the shape of joint stock undertakings representing a nominal capital of \$2,500,000,000, about five times the current cash existent in all Europe. It was only necessary for an unknown person to take a room and to advertise to receive subscriptions amounting to thousands of pounds, which, it is needless to say, disappeared along with the promoter. At this time all manner of insurance swindles were afloat. Advertisements may be seen offering to insure horses from natural death, to increase children's fortunes, and there was even a company which offered general assurance from lying.

It was in 1774 that the association of underwriters and brokers calling itself The New Lloyds settled down in the Royal Exchange. It was here, at about this time, that the printed policy of insurance was first made uniform; and that adopted on the 12th of January, 1779, is used with few alterations today. In fact, it is identical except that the opening formula, "Be it known that," has been substituted for the more pious, "In the name of God, Amen." The association was again reorganized in 1811, but was not finally incorporated by an Act of Parliament until 1871. The objects of the incorporation were stated to be (1) carrying out marine insurance, (2) the protection of the interests of members of the association, and (3) the collection, publication and diffusion of intelligence and information with respect to shipping.

In 1871 the society created a Nautical Institute called Lloyds Register of British and Foreign Shipping. This classification of ships is the work of a separate executive. The first steamer noted on Lloyds Register was the *James Watt*, 294 tons, built in the previous year at Greenock, and classed as "A 1." That brief but very significant term, "A 1," has become so general a colloquialism that people who constantly use it have probably little idea of its origin. In imitation of Lloyds there was founded at Rostock in 1868, and afterward transferred to Berlin, the Germanische Lloyds. After this French, Russian and American companies have been similarly formed. The name has also been adopted by navigation companies, perhaps because of the security it seems to promise. The North German Lloyd of Bremen, founded in 1857, traverses the North Sea, the waters of England, North and South America. The Austrian Lloyds, founded in 1836, was at first a marine insurance company, but now it sends ships through the Adriatic and Mediterranean seas and across the Indian Ocean to Hongkong.

The great central room in the handsome Lloyds building in London is available only for subscribers and members and is generally spoken of as the "Room." Subscribers pay \$25 per year and have no voice in the management of the association. Non-underwriting members pay an entrance fee of \$60, while underwriting members pay an entrance of \$500 and also deposit securities of a value of from \$25,000 to \$50,000, according to circumstances. Lloyds is managed by a committee chosen from its own members, which in turn appoints clerks and a secretary to attend to the daily routine of business. The mode in which this is done is very simple. Brokers write on a slip of paper the name of the ship, the ship's master, the nature of the voyage, the subject to be insured, and the amount at which it is valued. If the risk is accepted, each underwriter subscribes his name and the amount he agrees to take or underwrite, the insurance being effected as soon as the total amount is made up, and in these times of progress in shipbuilding and navigation the sum paid by the insured to the underwriter is a very moderate tax indeed.

As in the old days of insurance gambling, all manner of risks may be covered at Lloyds,

but marine insurance is the only kind which receives official recognition. There are two classes of members—brokers who act for clients, and underwriters who do business on their own account. Admission is not easily obtained, and the most careful investigation is made into the character of all applicants. No one who has been in the "Room" at Lloyds during office hours will forget the animated scene. The underwriters sit at tables ready for business, and to them brokers come constantly submitting risks to be covered for their clients, or perhaps some member comes to gain information before undertaking a certain risk. As has been said before, the intelligence system at Lloyds is as perfect as modern ingenuity can make it. The coasts of nearly all the civilized world are subdivided into districts which are covered by Lloyds agents, and much fuller news is obtained when the subject for information comes within reach of the signal stations which have been erected throughout the world at Lloyds's expense. All the marine insurance companies of the world practically are dependent upon this source of information. To the underwriters' associations in Paris, Marseilles, Bordeaux, Genoa, Hamburg, Bremen, Berlin, and in fact all the commercial centres of Europe, to New York for the underwriters' association there, and to Melbourne for the underwriters in the Australasian colonies go constant bulletins from Lloyds. The registers available for members are wonderfully complete. Near the entrance to the "Room" is the huge casualty book, in which may be found recorded the fate of many a gallant ship. In another set of volumes are set down the movements of every British vessel, for these are entered up as the telegraphic news arrives, and the actual position of the vessel and the name of the place where she was last spoken is given.

There is still another register containing the biography of every skipper in the British Mercantile Marine, where and when he was born, on what ship he served his apprenticeship, what vessels he has commanded, the casualties that have befallen them, and any other information which may be of help to the underwriter about to undertake a risk in which this particular captain is concerned. There is another volume called the Confidential Index, which is not so easily obtainable.

by the public. In this the underwriter finds the history and financial standing of every ship-owning firm and company. Here, also, is to be found a list of captains who have had their certificates suspended, with reasons for suspension, and whatever other information is considered of value to those who conduct marine insurance business.

One of the most distinctive sights to the average visitor to Lloyds is the crier, who stands in a rostrum under a great sounding-board and announces good or bad news as it is received from the four corners of the earth. A great ship's bell is placed above his right hand, and when it rings out, all the noisy babble of the place ceases, as every one is keen to hear whether the news announced concerns some long-belated ship's arrival in port or if the intelligence adds another name to the many which have surrendered to the fury of the sea. And after this will be posted a very brief formula concerning the missing ship, which is full of significance, for it means that all hope is gone and that captain and crew are dead in the eyes of the law. There is a room devoted wholly to the posting of these notices and telegrams, and it has come to be called "The Chamber of Horrors."

The bell which announces the news, good or bad, which is daily received, is itself connected with a romantic chapter in the history of Lloyds. The late Mr. Frederick Martin, the historian of Lloyds, as well as the best authority upon marine insurance, tells very fully the story of the wreck of the war-ship *Lutine*, to which this bell formerly belonged. For about sixty years the bell itself lay at the bottom of the Zuyder Zee. The ship went down in the autumn of 1791 with all on board save one solitary survivor. It was originally a French man-of-war, but after its capture by Admiral Duncan it was added to the British Navy. At the time of the disaster she was on her way to Hamburg, with a large amount of gold and bullion on board, consigned there by English merchants. But as this was the day of the newspaper hoax, the most extraordinary stories were printed in the London papers at the time about the cargo. One story had it that the Dutch crown jewels were on board and that the treasure on board amounted to \$10,000,000. There is no doubt that the amount was a large one, but as England was then at war with the Nether-

lands, and the Netherlands Government claimed the wreck, English underwriters had little hope of recompense. It is said that local fishermen succeeded in salving coin and bullion amounting to \$415,000 from the wreck and were allowed by their Government to retain a third of this.

But peace had been restored many years; in fact, not until 1858 were salvage operations begun on a scientific scale. As a result of this search, Lloyds secured in all the sum of \$110,810, as well as the bell which bears the royal crown and arms of Bourbon, and the ship's rudder, from which were made a great armchair and a table which are to be seen in the underwriters' room. This sum saved, however, by no means satisfied the expectation of those carried away by the glamour of submarine treasure-seeking, for even in 1871, when the Act of Incorporation was granted, the committee of Lloyds secured the insertion of a provision that "the society may from time to time do or join in doing all such lawful things as they think expedient with a view to further salving from the wreck of the *Lutine*."

It is needless to say that this organization is to a great extent the public prosecutor as well as the police system of the sea. It is largely owing to the relentlessness of Lloyds in dealing with wrong-doers that many old forms of piracy and sea knavery have come to an end. This is not to say that the members of Lloyds quibble over genuine mistakes. They have been known to pay insurance without question even where the ship lost had sailed from another port than that named in the policy. Still it is inevitable that underwriters should at times be victimized. Of course, unscrupulous owners and captains do not scuttle ships now with the same impunity which they enjoyed in the early days of marine insurance. But the records at Lloyds are filled with stories of bold buccaneering men of the sea and also filled with the very severe punishment meted out to them.

Even today cases of fraud discovered in attempts to secure marine insurance unjustly are dealt with very severely by the courts. A well-remembered case at Lloyds concerns the yacht *Firefly*. Not long after this boat had been insured for a considerable sum, two men landed in an exhausted condition from a rowing-boat on the south coast of

England. They told a long story of shipwreck, of perils braved, of how the *Firefly* had gone down and under what great difficulty they had escaped. It was subsequently discovered that the whole story was an invention, and that the very boat in which the escape had been made had been stolen by the shipwrecked mariners. They were just upon the point of receiving the sum of insurance money they expected. They obtained instead a lengthy term of imprisonment as the just meed of their audacious crime.

But with the developments of modern science these enterprises have become as rare proportionately as have the actual risks which nowadays threaten marine commerce. Marine underwriters of a hundred years ago would indeed be amazed at the enormous reduction which has taken place in insurance rates. The price of gold bullion between London and New York is only twenty-five cents net per 100 lbs. and this covers not only the risks of the transatlantic voyage, but transit from the London house to the liner and from the liner to the firm in New York to which the bullion is consigned. And the most easily negotiable of securities, even when sent by registered post between England and the United States, can be covered by insurance at the rate of one-third per 100 lbs. There comes a time, however, when

this very rate rises by leaps and bounds and seems to point in its rise to a great loss in life and property.

Only recently a great Atlantic liner was announced to be three days overdue. On the third day there was no noticeable advance in the rate charged for those who had neglected to insure property shipped upon it, but on the fourth day, when anxiety as to both the passengers and the property on board had increased, it was ominously announced from Lloyds that the rate of insurance upon this particular vessel had been advanced to ~~\$100~~ \$500. This was on Tuesday. On Wednesday, when no further news had been heard, the rate had jumped to \$25 in the \$500. On Thursday it reached \$50 and by Friday an enormous sum of \$100 in \$500 was declared to be the rate in any and all manner of insurance upon the missing vessel. It is needless to say how horribly these announcements confirmed the anxious fears of those most deeply concerned in the arrival of the vessel for all the world knows that if there is a hope it will be longest found at Lloyds. It is also needless to say that when the liner in question finally reached her dock in New York, nowhere was there greater rejoicing at the announcement than in the room where it was tolled out by the bell of the *Lutine* and read by the crier to the assembled crowd at Lloyds.

WHAT IS THE BEST COLLEGE?

A CLASSIFICATION OF SUCCESSFUL MEN ACCORDING TO THEIR COLLEGES—SMALL COLLEGES SURPASS—A STRIKING DISPARITY BETWEEN CO-EDUCATIONAL AND MEN'S COLLEGES—NEW ENGLAND COLLEGES THE MOST FRUITFUL

BY

EDWIN G. DEXTER

THE best college is the one which sends out the largest percentage of its graduates to fields of broadest usefulness, thus contributing most largely in proportion to its size to general culture and progress. Assuming this definition, it is possible to form a judgment from an examination of "Who's Who in America" as to the sort of college that has given the country

successful men. The criterion is not infallible, but it would be difficult to find a better.

"Who's Who" for 1900 contains the names of 8,602 Americans, 3,237 of whom were college graduates distributed among 200 colleges. One hundred and forty-four of these colleges, embracing all the more important institutions, have in round number 260,000 living graduates, only 2,655 of

whom were mentioned in "Who's Who." Classifying these 144 colleges according to size, we have the following table:

TABLE I. CLASSIFICATION AS TO SIZE

	Number of Students	Number of Colleges	Total Number of Graduates	Mentioned in "Who's Who"	Percentage Mentioned
Below 500	85	67,387	953	1.40	
500 to 1,000	26	34,810	328	.94	
Above 1,000	33	157,617	1,371	.86	

Although this table would seem to show conclusively that the smaller college is best, it should be remembered that the larger universities furnish men from graduate or professional schools who are not accounted for in this list—which includes only graduates with the bachelor's degree. On the other hand, men are accredited to large colleges who really graduated from small ones. The "Who's Who" names show almost no graduates of more than ten years' standing, and many colleges, notably the western state universities, may no doubt have passed from the small class to the large since their prominent sons were graduated; so that the classification is hardly accurate. These facts, however, do not seem to disturb the advantage of the smaller colleges. For, though Harvard and Yale—leaders for the large colleges—far exceed the average, there are nine of the colleges with a membership below 500 which surpass them.

The second table shows the result of a classification on the basis of sectarianism:

TABLE II. CLASSIFICATION AS TO SECTARIAN AFFILIATION

	Number of Colleges	Living Graduates	Mentioned in "Who's Who"	Percentage Mentioned
Sectarian	75	75,476	585	.78
Non-sectarian	69	184,367	2,070	1.12

Study shows that non-sectarian colleges average three times as large as the sectarian, but the two individual colleges with the largest number of eminent graduates are not only small, but sectarian.

In the third table the important comparison is between the first and second classes in the table. The question here is

chiefly whether a co-educational or a men's college is better for men:

TABLE III. CLASSIFICATION AS TO SEX OF STUDENT BODY

	Number of Colleges	Living Graduates	Mentioned in "Who's Who"	Percentage Mentioned
Co-educational	94	138,247	802	.58
Male	46	114,660	1,839	1.60
Female	4	6,736	14	.03

Deducting from the total number of living graduates of co-educational institutions one-fourth, about the present proportion of women, we still have a sufficient preponderance of success for men in favor of the college for men.

Table IV. fails to throw much light on a much discussed question:

TABLE IV. CLASSIFICATION FROM THE STAND-POINT OF THE SIZE OF COLLEGE TOWNS

	Number of Colleges	Living Graduates	Mentioned in "Who's Who"	Percentage Mentioned
Less than 30,000 pop.	115	150,236	1,494	.99
More than 30,000 pop.	29	109,607	1,161	1.06

Dividing the country into five geographical sections we have the following result:

TABLE V. GEOGRAPHICAL DISTRIBUTION

	Number of Colleges	Living Graduates	Mentioned in "Who's Who"	Percentage Mentioned
New England	19	53,620	1,116	2.08
Middle	26	77,310	751	.97
Southern	38	39,790	271	.68
Central	55	70,934	447	.59
Western	6	7,135	39	.54

In 1890 however, about 43 per cent. of the college students in the country were in the central and western states, whereas in 1900 there were about 47 per cent. This growth has not affected the number of names in "Who's Who." Moreover, the co-educational character of the western universities tends to bring down their percentage. Yet seven of the twelve leading colleges in our list are in New England.

The best college seems to be the *small, non-sectarian college for men in New England in towns of more than 30,000 inhabitants.*

THE COMING OF THE AUTOMOBILE

THE MOTOR AGE WILL FOLLOW THE RAILWAY AGE—GOOD FOR ALL PURSES—HOW THE AUTOMOBILE WILL AFFECT THE LIFE OF THE INDIVIDUAL AND THE COMMUNITY—THE CAR-OWNER HAS SIX TIMES THE SPHERE OF THE HORSE-OWNER—A GREAT INDUSTRY AND A SOCIAL REVOLUTION

BY

HENRY NORMAN, M.P.

EDITOR OF THE ENGLISH "WORLD'S WORK"

FIRST, the age of the stage-coach—a fine, manly age, full of splendid horses and vigorous men, redolent of romance and gay with color. Second, the age of the railway—the foundation of modern industrialism, the creator of vast wealth, the parent of great cities. Tomorrow and thereafter, the age of the motor—a revival of country life infinitely beyond that of the old coaching days, a vehicle of national development greater than the railway, an industry destined to be inferior only to iron; coal, and shipbuilding, a social revolution in the life of the individual man and in the organization of the community.

Doubtless today this forecast will seem exaggerated. A year or two hence it will be a commonplace of opinion. Today we all talk of automobiles and motoring; we see a huge show of motor vehicles; we read striking statistics of production; we learn of non-stop runs of hundreds of miles, and of speeds exceeding those of the fastest expresses; and we find in this a convenient topic of dinner-table talk. But few even of our leaders of opinion have yet realized that we are on the eve of a more momentous change than that inaugurated by Watt and Stephenson, with even greater consequences to the community than their steam automobiles on fixed rails brought about.

The automobile is no longer an experiment, and motoring is no longer only a pastime or a luxury. The internal-combustion engine for locomotion is finally invented. Of course, it will change and improve. It may be a two-cycle engine instead of a four-cycle; it may continue to be fired by electricity, or it may fire itself automatically by compression; it may be combined with a dynamo and a series of electro-motors; it may burn gasoline,

alcohol, common petroleum or heavy gasolite residue; but substantially in its present fundamental form it has its own age of activity before it, until the problem of storing in cheap light-weight accumulators electric energy generated at Niagara or Imatra or the Zambesi is solved, to transfigure or more the practical applications of power. Some of the most successful of the automobiles of today are propelled by steam engines and these have certain distinct advantages of their own; but I am speaking here of a new invention—or, rather, the new application—of the gasoline engine, with which probably eighty out of every hundred mechanically propelled vehicles, other than those of heavy traction, are equipped; and of this it may safely be asserted that for all practical purposes it is today thoroughly efficient even without the certainty of its constant improvement. Not much more than a year ago the motor-car was a noisy, ill-smelling, costly and unreliable machine—a public nuisance. Today it is silent; if it smokes the driver is to blame; it is within the reach of a man of modest means; and it is as unlikely to break down as any other product of human ingenuity. I do not mean, of course, that every car one meets on the road has these admirable qualities, but they characterize the latest inventions in the motor world. A car of twenty horse-power capable of carrying four passengers at forty miles an hour, can hardly be heard by those on board; in fact, its extreme silence is a new element of danger, as the only notice of its approach is the horn of its driver. It is on land, in that respect, what the canoe is on water. These most silent cars are at the moment expensive, but even moderately priced cars can be had as silent as any body

ought to desire them. This, for the benefit of the non-expert reader, is due chiefly to two factors: the balanced and slower revolution of the engine by the increased number of cylinders, and the introduction of the valve which is opened and closed mechanically in place of the valve held shut by a spring and opened by the suction of the piston. Opinions differ yet upon the advantages of the new method, but in my humble and amateur judgment the motor with automatic spring valves will be as obsolete a year hence as the bicycle without free-wheel action is today. There are, moreover, today one or two makes of car with the older valve which are almost as silent as need be.

Improved methods of combustion and lubrication have practically abolished offensive odors. Pneumatic tires, once the bane of the motorist's life—for he never dared be confident that he would not have to spend an hour in tedious and dirty repair of a puncture by the roadside—now with luck will run a thousand miles without mishap, and several thousands before they need be re-covered or replaced. And it is by no means certain that the inflated rubber tire is destined to remain an essential part of a motor-car. In the vehicle of the future, concussion due to inequalities of road surface may be absorbed by springs, either in the wheel or on the body. This would be a more scientific method. Side-slip, too, the one and only real danger of motoring, both to the motorist and the public, is on the eve of being, if it is not already, overcome. Gasoline costs twenty-five cents a gallon, and a gallon will take an average car twenty miles, and each new car put on the market runs farther on less—one make of car has just run fifty miles on a gallon. A driver with access to a small workshop who cannot do most of his own repairs does not know his business, and as it is to be hoped that before long an elementary knowledge of mechanics and the ability to handle all simple tools may be considered a necessary part of every man's education, the car-owner who does not keep a mechanic-driver ought not to need to send his car to a professional repairer except in case of something breaking. It is truly absurd to see, as one often does, an owner, or indeed a driver, hurrying his car in alarm to the makers if the engine says "puff" when it ought to say "paff," when the same man

would doctor his horse without a misgiving—though putting a motor-car in order is child's play compared with getting a sick horse well, as anybody knows who has tried both.

And as regards cost—too big a subject to be dealt with here except in very general terms: For \$7,500 or a little more you can get the best car in the world, a magnificent vehicle, of the utmost comfort and the most unnecessary speed—a marvel of *carrosserie* and luxury and workmanship, the *dernier cri* of motor fashion. And parenthetically I must add that something more than the possession of a big bank account ought to be necessary before a man is permitted to drive one of these tremendous engines upon the public roads. In the hands of a man who really understands them and has had ample experience in driving they are under perfect control, but it is almost criminal for anybody to drive them who has not these qualifications. But to return to the question of cost: for \$3,500 or \$4,000 you may, if you know or are well advised, procure a car to all intents and purposes as good as the most costly. The highest prices last only for a season, and all prices are coming down fast. The car that about \$2,500 will buy is not much inferior, and nobody who does not need the social distinction of owning the very latest and biggest and fastest and smartest need drive a better car than can be had for that reasonable sum.

To come to "light cars," \$1,500 or a trifle more, combined with a certain knowledge of the curious varieties of price for the same thing, will make you the owner of a vehicle that will carry four passengers safely and reliably and comfortably at thirty miles an hour on the level, and at an average of eighteen miles on ordinary country roads, and that you may be proud to show your friends. Below this figure, the buyer will do well to choose a two-seated vehicle, possibly with a detachable spider seat behind for a servant on occasions. Nothing is more unsatisfactory than a car too heavy for its horse-power. These were turned out in quantities not long ago, and today they are for sale second-hand by the hundred for what they will bring. A first-rate two-seated car, by one of the best makers, perfect for its work in all respects, in which you can start for Edinburgh from London or for Chicago from New York with-

out a moment's fear of accident or discomfort or danger or serious delay, may be bought for \$1,000, or even a little less. And if you decide, after examination and reflection, to choose steam, \$250 may be economized on the above price. Below \$750 there is at present no car fulfilling the above conditions, except second-hand, and there you must proceed very warily indeed or you will take home a four-wheeled scrap-heap. Finally, there is the motor-bicycle, but this is so remarkable a production, and is destined to play so great a role in our social life in the near future, that it deserves a separate article.

I have now shown that the price of a car is no longer prohibitive, but that good cars may be had to suit all purses. It is delightful, of course, to own, and superlatively so to be able to drive, one of the magnificent monsters, but husband and wife may get great pleasure and health and constant change, and vastly enlarge their circle of friends and places to visit, out of a \$1,000 car, and unless the man of the pair is in the habit of hammering his thumb, or drawing tin-tacks with a chisel, there will be no need whatever for them to keep a driver. The little car will cost them less a year than a pony and trap, and do five times the work. Indeed, there is not the slightest reason why the intelligent woman of today should not keep and manage and drive such a car entirely by herself, hiring the local boy to wash it occasionally in muddy weather. There is nothing about it which a woman who understands a sewing-machine could not learn in a week.

What is the probable influence of the automobile upon contemporary life? The privately owned car alone will enormously affect this. Every car-owner has at once a vastly increased radius of movement. The owner of a pair of horses in the country may be said to have a practical everyday radius of about ten or twelve miles. Twenty or twenty-five miles is a day's work for a good horse or a pair, and though this can, of course, be exceptionally much exceeded, it cannot even be maintained as an average. The horses that have done twenty-five miles on Monday will not be expected to do much on Tuesday. Moreover, a twenty-five-mile drive is a tiring thing, and nobody cares to do it two or three times a week. If this estimate of the use of horse-flesh seems too

small, let the reader who lives in the country and keeps horses ask himself how often week pass before he makes a call due at a horse a dozen miles away. And this keeping of horses is an expensive business, with all the concomitant and never-ceasing payment for doctoring, shoeing, saddlery, brushes, clothing, cleaning-pastes, etc. A carriage and pair means \$2,000 a year in town and more than \$1,500 in the country, as it involves there at least one other carriage, alternate horses, and two servants. "Moderate means in the country permits of only one horse and carriage, and this, including a man in liveries but charging nothing for stabling, involves an expenditure of \$600 per annum, after an initial outlay of from \$500 to \$1,000, according to the style of the turnout. Really exaggerated estimates of the cost of keeping an automobile have misled opinion." It is well within the mark, however, to say that a car should not cost less than a carriage and pair, and a small car less than a horse and carriage. A correspondent of the *Automobile Club Journal* has just given exact figures of the use and cost of his ten horse-power, four-seated car. He does not keep a man, and nothing is allowed for depreciation. His average number of passengers was three, his average speed eighteen to twenty miles an hour, his distance run in the year 4,975 miles, and his total cost was little more than \$300. And this, be it remembered, is what an ordinary man would call a "big car." Another correspondent in the *Motor-car Journal* gives his figures for five months of the ownership of a five horse-power, three-wheeled tandem, which would be little cheaper than a two-seated car. He drove it 1,648 miles, and his entire expenditure was about \$22.50, or a little more than a cent a mile. He describes himself as a "man who conducts a small country business."

My point in giving these figures is to show that everybody who keeps a horse may keep a car for less money, and that thousands of people who have never felt that they could afford a horse will certainly keep a small car as soon as they learn the cheapness and reliability of it. Now to return to the question of radius, which for horse-keepers I have put down at about twelve miles. For car-keepers it is, of course, much less, unless they ride bicycles, and a man and his wife cannot go out to dinner on bicycles, etc.

indeed, go out regularly with comfort during several months of the year. With a car of ten or twelve horse-power the radius of a family—the whole family—is comfortably thirty miles, and, of course, much more on occasion and if they like motoring. To go to lunch thirty miles away and come back is an easy performance; and a hundred miles in the day, fifty out and back, can often be done not only without undue fatigue, but with great enjoyment and benefit. Now the area of a circle whose radius is twelve miles is 452 square miles, but the area of one whose radius is thirty miles is 2,827 square miles. Thus the car-owner has a sphere of activity exceeding by no less than 2,375 square miles that of the horse-owner, with all its additional opportunities of intercourse with his fellows. In other words, the possession of a car multiplies the contents and the effective sphere of his life by more than six—and by much more if he did not and cannot keep a horse. Think of what it means. Every friend within 3,000 square miles can be visited, any place of worship or lecture or concert attended, and business appointment kept, the train met at any railway station, every post and telegraph and telephone office within reach, every physician accessible, any place reached for golf or tennis or fishing or shooting, and with it all fresh air inhaled under exhilarating conditions. It is a revolution in daily life. With an automobile one lives three times as much in the same span of years, and one's life, therefore, becomes to that extent wider and more interesting.

The influence upon the community will be no less than upon the individual. Our country districts will revive. The old coaching roads and coaching inns will once more be thronged with travelers. We shall know the land we live in—its rural interests, its beauties, its antiquities. Country residential property will rise in value. The man who has business in the town will no longer be dependent upon a slow and rare service of trains. His first-class carriage will await his will in his own coach-house. Therefore thousands of the town-dwellers of today will be the country-dwellers of tomorrow. It will no more be necessary for those who would dwell in the country to stipulate that their house shall not be more than so many miles from a railway station. To the car-owner it is virtually the same thing whether his

home is one mile or a dozen miles from his nearest railway. This will bring into the market at good prices a great number of country places unlettable and unsalable today. There will soon arise, in consequence, an irresistible demand for better roads—in all probability for a division of road-control similar to that of France, the main arteries under the direct management of the state, the smaller roads under local control. It goes without saying that the present absurd laws regarding speed will soon be altered—by abolishing all restriction upon speed, and making every driver responsible, under heavy penalties, for inconsiderate or dangerous driving.

So much for the privately owned car and its future influence. This, however, will be but a minor factor in the coming development of motor traffic. The motor vehicle for business purposes will soon be universal. Already the more enterprising tradesmen are using, with greater efficiency and economy, light motor vans for the collection and delivery of their goods. In New York heavy commercial transport is being rapidly absorbed by the motor. A few years hence we shall look back with a smile to the practice of the railways and large firms in using horse-drawn vans. Commercial travelers will take their samples through the country in suitable motor-cars.

Agriculture will be one of the chief industries to benefit by the coming revolution. Already a company has been formed for manufacturing an agricultural gasoline motor which has proved its practicability. Most of the important large farming tasks in the United States are accomplished by some kind of engine or motor. A motor lawnmower already makes it less costly to keep up those stretches of glorious sward which England alone can show. Groups of farmers will combine to send their milk, eggs, butter, fruit and vegetables to a town market if within thirty miles, or if farther to a railway. By the return journey the farmer will get his supplies from town or rail at a fraction of their present transport cost.

The coming of the motor means an absolute change of the nature and conditions of passenger traffic in cities. The cab horse and the stage horse will soon be extinct as the megatherium—to the satisfaction of every lover of horses. The public motor phaeton

for fine weather, with a closing body for wet weather, has been long in coming, but it will arrive with a rush. The luxurious electric brougham, weighing a ton or more, devouring costly electric energy and unfitted to go outside city limits, does not touch this problem, being merely for the pleasure of the wealthy. But the neat, quiet, quick, comfortable little car, seating two besides the driver and charging twelve cents a mile, will sweep the awkward and dangerous hansoms from the street. An excellent motor omnibus has just made its appearance in London, and from the moment that its speed, reliability and comfort are proved, that utter abomination of locomotion, the 'bus, the despair of all students of traffic problems, is doomed.

For my own part, I am convinced that ten years hence there will not be a horse left in the streets of London or New York except the few kept purely for pleasure and pride in their beauty and strength and for police and military purposes. Their disappearance will have three results: first, twice as much traffic can be accommodated in any area; second, the streets, no longer subjected to the pounding of their iron-shod hoofs, will be smooth and quiet and will last incomparably longer—to the saving of the taxpayers' money; and third, there will not be 5,000 tons of manure deposited in London every day, to be collected and carted away, filling the air with ammoniacal odors and the lungs with poisonous dust, and costing an enormous yearly sum for its final disposition.

I am even inclined to go a step further and hazard the opinion that the motor will kill the railway. Why should the community pay a huge sum per mile for a special roadway for electric cars and a huge generating station, when self-propelled motor omnibuses of equal speed, comfort, capacity and economy can use the common road, and, by their ability to be steered round obstacles, not interfere with the rest of the traffic? I am convinced that municipalities would consult their own interests by carefully considering the introduction of motor omnibuses before embarking upon the heavy initial cost of an electric railway system which may quite likely be obsolete before their depreciation fund has been charged a dozen times.

One great organization alone—the greatest of all, the railways—will suffer from the coming of the motor. The motor will rob

them of passenger traffic, of the transport of mails except for long distances, of the carrying of light goods and light agricultural produce, and will prevent them from opening up new districts, which will be served by light lines and motor vehicles as today in America by the electric trolley. To some extent the injury will be mitigated by the motor bringing to them agricultural produce from wider areas than can produce it profitably to cart to the rail; and, of course, the motor-engine or rapid succession of motor carriages, already planned in France and Austria, will replace the steam locomotive for suburban and light fast traffic. But on the whole, the stage-coach will be avenged upon the railway by the motor.

There are several other aspects of the development of motoring—such, for example, as the motor on water, where also it will effect great changes; and the stationary gasoline motor for light manufacturing and domestic purposes. One more matter, however, cannot be passed over, namely, the colossal industry that the manufacture of motor-cars and all that belongs to them will become.

In 1902 Great Britain imported motors and parts to the value of \$5,512,310 and exported only \$657,405. The value of the American output of motor vehicles for 1902 is officially reckoned at \$25,000,000. In the same year France exported motor-cars to the value of \$5,310,200. Two firms manufacturing pneumatic tires in France turned out in 1902 \$4,100,000 worth, and each of them has \$400,000 worth of goods in the charge of agents. Seventy French firms manufacture motor-cars, and their combined output last year was 12,000 cars. The industry employed 180,000 workmen, earning on an average \$360 a year each.

That the coming of the automobile will be a social and industrial revolution I have not the slightest doubt; that it will add vastly to the sum of human pleasure and health is certain; that it will render what Mr. Hardy calls "the doubtful honor of a brief transit through a sorry world," a fuller and more interesting experience, I feel sure. In fact, it

" 'Tis life whereof our nerves are scant,
More life, and fuller, than we want."

the motor-car, in one sense, bids fair to go a good way toward supplying the deficiency

TWENTY MILLIONS FOR PRACTICAL CHURCH WORK

THE PERSONAL STORY OF HOW THE TWENTIETH-CENTURY THANK-OFFERING OF THE METHODIST CHURCH BROUGHT \$20,000,000 TO EDUCATION AND BENEVOLENCE

BY

EDMUND M. MILLS, PH.D., D.D.

SECRETARY AND EXECUTIVE HEAD OF THE THANK-OFFERING COMMISSION

THE culmination of any undertaking that can point to "millions in it" is interesting to the average American. The story of a gold or silver mine with a \$20,000,000 output; of a lucky speculation netting stock gamblers a score of millions; of an invention enriching its discoverer or promoters by that amount anywhere would have eager readers. How the Methodist Episcopal Church raised its thank-offering of more than \$20,000,000 is of interest to others besides churchmen.

The thank-offering was the idea of a Methodist layman in England who is the son of a Methodist minister. Honorable Robert W. Perks, a member of Parliament, is the solicitor of a London railroad company. He was impressed by the vast aggregate resulting from railroad fares none greater than a shilling. Why not fill the treasuries of the institutions of the church by a thank-offering of a million guineas from a million persons? The aim must justify itself to the cold judgment of the church and its adherents, but sentiment must be kindled and enthusiasm roused. The fund was to be a thank-offering to God for the most glorious century in human history. Mr. Perks persuaded the English Wesleyan Methodist Conference to make the attempt. The complete success of that thank-offering fund is known all over the world.

Probably it will never be known who was the first to propose that the American Methodists should make a thank-offering. It is likely that with the English example before them the suggestion came to many. The presidents of Methodist schools whose needs had been only partially met by the churches because of pressing local claims felt that this

was their opportunity. They sent a committee to petition the bishops of the Methodist Episcopal Church at their meeting, held in Trinity Church, Springfield, Mass., November 1, 1898, to appeal to the church to make a thank-offering to be devoted to church educational institutions. They received a cordial, sympathetic hearing. The bishops, after long and earnest deliberation and debate on what objects should be included in the thank-offering, and how much should be asked for, enlarged the proposed scope of the movement, and appealed to the church and its friends for a thank-offering of \$20,000,000 to be devoted to permanent work or endowment for the following objects:

- (a) "For education as represented either by particular schools in this country and in foreign lands, or by a general educational fund for the aid of needy schools.
- (b) "For charitable or philanthropic work as previously set forth.
- (c) "For endowment for city evangelization.
- (d) "For invested funds for the support of conference claimants.
- (e) "For the payment of debts on our various kinds of church property.
- (f) "For any specific objects in foreign fields."

This fund was to be above and beyond the regular gifts of the churches for their own support and the support of denominational benevolences. Nothing used for current expenses could count on the thank-offering. It will thus be seen that in several important particulars this thank-offering differs from the English one. Here no specified gift was asked from the individual. In England

everything went into a central treasury, from which each of the various objects received a share, the size of which had been determined and announced beforehand. Here the giver had the right to determine to what object his thank-offering should be devoted. He was encouraged to give, knowing that the cause he was interested in was to receive his entire gift. Again, the gift went directly to the treasury of the cause for which it was given. The share that any organization or institution received was determined by its promptness and perseverance in getting and keeping its needs and worth before the church. The presidents of some church educational and philanthropic institutions are greatly disappointed that a movement they fondly dreamed would fill their coffers without any effort on their part leaves them discredited and less prepared to meet competition, because their more active and enterprising rivals have seized and improved a great opportunity.

The bishops appointed a Twentieth-Century Thank-Offering Commission to give direction to the movement. The commission consisted of seven bishops, eight clergymen—either college presidents or identified with the educational work of the church—and fifteen representative laymen. Bishop Edward G. Andrews, D.D., LL.D., who has his official residence in New York city, was subsequently elected President of the Thank-Offering Commission, and Reverend Doctor Frank A. Parkin, of Germantown, Pa., one of the most successful and popular pastors of Methodism, was elected corresponding secretary. Doctor Parkin has been engaged with his people in the erection of one of the most expensive and beautiful church structures in the denomination. This, added to his duties as a pastor and preacher, left him run down nervously. His physician, one of his parishioners, warned him that he had reached his limit of work, that rest would bring him restored health, but that if he persevered in his resolution to superintend this new enterprise he would break down entirely. Doctor Parkin, thus warned, reluctantly resigned. I was chosen to succeed him, and no one has more cordially cooperated with me, or has rejoiced more heartily over the success of the thank-offering, than Doctor Parkin.

The work began March 20, 1899. We

sent our requests to many leaders of the church for suggestions for organization. More than a hundred replies were received. The plan of organization finally proposed to the commission and adopted by it provided for a thank-offering commission in every annual conference, presiding elder's district and pastoral charge. The work was not to be carried on by an army of salaried agents, but by the bishops, presiding elders and pastors enlisting the laymen and cooperating with them. That the plan was successful is seen by the fact that nearly \$21,000,000 have been secured, with the expenses of the General Commission considerably less than \$20,000. It was not successful everywhere. In some conferences it was a lamentable failure. A few conferences did nothing more than organize because of a lack of leaders. To raise \$20,000,000 required an average gift of \$9 from the white members of the church. The Los Angeles (California) district, through its presiding elder, Reverend Doctor Bovard, reports \$36 a member for the thank-offering from its more than 6,000 members. Other districts as wealthy have not contributed \$5 per member. The colored conferences were willing and generous, but poor.

An educator declared to a congregation, gathered to hear the thank-offering advocated, that the addition of such a vast amount to the resources of the church must be fraught with great peril to her. His institution has not been imperiled to the amount of a dollar. Many true friends of the church, forgetting that the sowing must go before the reaping, were greatly disquieted by such prophecies and criticisms, but those who wanted miracles—or immediate results—predicted failure if torchlight and brass-band methods were not added at once. It must be admitted that it was not a small task that the bishops had appealed to the church to undertake. For \$15,000,000 the United States bought an empire in the southwest from France. For a little more than a third of the proposed thank-offering we purchased Alaska from Russia. After providing the largest submarine navy in the world for Spain she sold us the Philippines for \$20,000,000.

The very magnitude of the undertaking, however, was inspiring. From unexpected quarters came encouragement. The first

gift reported to the secretary was a double gold eagle from a day-laborer in the north-west. The two women's missionary societies each resolved to contribute \$200,000 toward the \$20,000,000. One gave in the end \$409,000, besides increasing its regular contributions for current expenses; the other went far beyond its proposed thank-offering. The conferences made up of foreigners were among the first to respond. One German conference, made up of people in moderate circumstances, gave \$20 per member to the thank-offering, and a Norwegian conference surpassed it with \$22 per member. The Church Extension Society and the Freedmen's Aid and Southern Education Society wheeled into line. Twelve leaflets bearing on various phases of the movement were printed and sent to every pastor and presiding elder in the church, and they were urged to circulate them freely. The postage bill for these samples alone was between \$200 and \$300. The church newspapers were furnished with items that would arouse curiosity and create interest in the thank-offering. The Secretary was constantly employed in addressing the annual conferences where the pastors met, and twentieth-century thank-offering conventions, and in carrying on a correspondence that extended to every part of the church. With Reverend Doctor W. F. McDowell, Secretary of the Board of Education, who has had a large share in securing the \$8,500,000 for church schools, I went to Portland, Ore., and for thirty days we spoke in the interests of Methodist denominational schools, averaging more than one address a day for that period, and closing that campaign at Riverside, in southern California. For a thousand miles down the coast the claims of four Methodist colleges were urged. Five weeks were spent in Iowa at various times, and more than forty addresses were made in that commonwealth alone. It is doubtful whether the church ever witnessed just such another campaign for education as was carried on for one college in Iowa. The college president, financial agent and college quartette visited with me a dozen of the cities and the principal villages of its patronizing territory. The meetings were thoroughly advertised. The young people came out to hear the quartette. The old people came out because the young people had. After the meetings young men and women who

wanted to go to college crowded around the president to make arrangements. The men and women who had money were not always as eager to interview me. We sought them out, and if they escaped without an offering then they were reserved for future and further treatment. This institution had a football team that had won a series of brilliant victories. One of its best players startled me by seriously proposing that football games be arranged for the afternoons with the local teams where the evening meetings were to be held. He was sure that the young men in the places visited would then decide without hesitation that there was only one place where the right kind of a college education could be secured. Although not opposed to new schemes, I had to veto the idea.

In personally representing the thank-offering I visited every state in the Union and have traveled more than 170,000 miles. The first year the payment of church debts more than any other object claimed the attention of the church. When the thank-offering began, January 1, 1899, interest was being paid on debts resting on churches and parsonages that amounted to \$12,500,000. The country was emerging from a period of great financial depression. The debts that discredited where they did not imperil the local churches should be paid without delay. The papers became filled with reports of Methodist churches that had paid their debts. Mr. Henry Benedict, a layman of New Haven, Conn., proposed that the Methodist churches of that city pool and pay all their debts. The aggregate was only \$70,000, but it encouraged others.

When we went to a field, while we represented all the objects included in the thank-offering, we emphasized the things the Methodists of that place were intent on doing. In one place the college had the right of way, in another the local church debt, in a third the Orphanage or Worn-Out Preachers' Fund. The most remarkable thing about the thank-offering movement is that with six different objects entitled to enter any church field and present its claims, there has scarcely been any friction between them or their representatives. When one college received a large gift the friends of all the other colleges rejoiced, for they knew it would help their institutions. The emphasis has been placed on the endowment of church

colleges and academies. When the Methodist Episcopal Church entered upon the thank-offering movement she had \$27,000,000 invested in her schools. She closes it with \$36,000,000 assured, and she will make it at least \$50,000,000 inside of the next five years. Cornell College, Iowa, reported one day that its thank-offering had reached \$350,000. The other Methodist colleges of that commonwealth only took time to congratulate her and then redoubled their efforts to secure ample endowments. Mr. John D. Archibald offered \$400,000 to Syracuse University on condition that the conferences raise a like amount. The Chancellor, Reverend Doctor James R. Day, rallied the churches with such good effect that its thank-offering rose to \$1,203,000. In seven years its students have increased from 700 to more than 2,000. The \$8,500,000 raised on education for the thank-offering, and the \$500,000 that has come in through other channels, have been used to equip and endow institutions already in existence. After Allegheny College had received a beautiful chapel, science building and library, Mr. F. A. Arter, of Cleveland, offered to give \$60,000 toward its endowment if \$180,000 additional was contributed for the same purpose. His proposition was promptly met. In two other fields Mr. Arter made thank-offering victories possible. He offered to pay one-quarter of the debt of any Methodist church in Cleveland if it paid the rest. Cleveland Methodism is practically free from debt except in one church. He then offered to give \$1 for every \$9 raised for the aged Methodist ministers of one of the Ohio conferences. The Nebraska Wesleyan University paid what seemed an overwhelming debt. Hamline University added \$250,000 to its endowment. Mr. John E. Andrus, of Yonkers, offered \$50,000 to the Worn-Out Preachers' Fund of the New York Conference if that body would raise \$100,000.

All the time through the letters that poured into the central office of the commission the Secretary was enabled to keep his hand on the pulse of the church. Every victory was reported. The poor vied with the rich. A little later the hospitals and orphanages and old peoples' homes began to have their turn. Thirty years ago the Methodist Episcopal Church did not have a single hospital. During the thank-offering period she founded

two in one state. They have sprung up as if by magic from Boston to Seattle. The \$2,500,000 raised for this purpose under the thank-offering is but the beginning. Many of the letters received were pathetic in the extreme. Some experiences have been more amusing than pathetic. A saloon-keeper assured me that his mother, now dead, had been a true Methodist, while his wife had no use for Methodists, but belonged to the — Church. Said this man:

"If you will come round to my place I will give you \$10 for your thank-offering. I want the Methodists to keep ahead of the —s. It will make my old woman squirm when you get your \$20,000,000." That \$10 has not been called for yet!

The sons and daughters of Methodist ministers have been much in evidence during the thank-offering movement. The largest gift ever made to a Methodist University was made by a Methodist minister's son; the largest gift ever made to a Methodist charitable institution was made by another Methodist minister's son; and the largest gift ever made to the support of aged Methodist ministers was by another Methodist minister's son. The bishops of the church, by their active, hearty support, brought to the thank-offering many of its greatest successes. They not only called the church to undertake the work, but led them in it. Thousands of humble ministers and laymen worked hard and as effectively as the leaders. It was a great partnership for success.

The result in four years is a thank-offering of \$20,800,000, and in addition \$16,931,030 spent for new churches and parsonages and improvements on churches and parsonages, making a total of \$37,731,030, besides increasing the gifts for regular benevolences and meeting the current expenses of their churches. The church historian will say that the thank-offering closed at midnight, December 31, 1902, but the forces it set in motion will last a thousand years. Probably without the thank-offering some of these millions would have come into the treasury of the church, but a harvest of far more than \$20,000,000 will come directly from the seed-sowing of this period. Men, as long as they think of the thank-offering, will find a reply to rebuke and silence the prophets of indecision, of selfishness and of unbelief.

A DAY'S WORK OF A RAILROAD PRESIDENT

BY

F. N. BARKSDALE

I WANT to see the president," said a visitor with the dress and bearing of a farmer, in the anteroom of the executive office of a railway corporation.

"Write your name, address and the subject of your interview on this card."

"I don't want to write to him. I could have done that at home. I want to see him and talk to him. Tell him Hiram Horton, of Whitestone Township, wants to see him on very important business."

The message was delivered to the chief clerk, who, with accustomed urbanity, greeted Mr. Horton and inquired the nature of his business.

"It seems strange that I should take the trouble to come all the way here from my place to do a great benefit to this company, and then not be allowed to do my business with the head man. I don't want to deal with no understrappers, but I want to talk to the boss himself."

"But the president is exceedingly busy and I may be able to act for him," retorted the clerk.

"You're too fresh, young man—you can't do this business; but, if you must know, I will tell you that I want to sell him a gravel-pit at my place. It's the——"

"But, sir, the president cannot attend to those little details. His time is too valuable."

"Little details do you call 'em! Why, that's the finest gravel in Whitestone Township. I know you people want it. I have samples of it here, and I want to explain to the boss all about it and fix the price, and I want some money on account today."

"It is simply impossible, Mr. Horton, for the president to see you. The local superintendent attends to such matters. Go home and see him."

Hot on the heels of the retreating and disappointed farmer came a delegation of distinguished-looking men in high hats and fur coats. They were evidently expected, for

they were ushered into the presence of the president without intervening ceremony. Their mission was to dispose of a controlling interest in another great property, and even the chief clerk did not overhear their proposition.

A group of newspaper reporters trailed the delegation to the outer office to ferret out the object of the interview. Failing in this, they mounted guard in the hall to catch the visitors as they emerged from the temporary security of the private office. The chief clerk, being a strategist, guided their departing footsteps through another exit at the conclusion of the conference, and the newspaper men continued to cool their heels and to inflame their imaginations in the corridor for hours after the business was ended.

And so it goes throughout the day, and day by day.

The president of a great railway corporation is not protected from working overtime by the rules of labor-unions. He reaches his desk at nine o'clock. The mail that he finds represents an infinitesimal proportion of that which has been delivered to his chief clerk from the post-office as well as from the bags which come in from all parts of the railway system. This mass of correspondence includes letters in various languages on almost every conceivable subject. The mechanical world sends suggestions for everything from track-bolts to freak locomotives and mammoth ships for ferrying trains across the ocean. Applications for positions and for passes and appeals for contributions and subscriptions are as numerous as the stars in the firmament, while letters of advice on financial and traffic affairs form no inconsiderable percentage of this daily harvest. Some of the letters signed with fictitious names take the form of demands for money, with threats; others are from "cranks," and are simply the exploitations of visionary schemes bred in badly balanced brains. One wild dreamer outlines on quires

of paper a scheme for the construction of a transoceanic railway; another presents plans and specifications for equipping the front of engines with pointed steel hoods to prevent collisions. An esthetic individual describes a plan for beautifying waste places along the line, and as an antithesis to this proposition comes a suggestion to utilize these same wastes for advertising purposes. One correspondent offers his discovery as a free gift in the interest of humanity; another makes a "touch" for a present in return for a simple suggestion.

The clearing of his desk of the morning mail may occupy the first hour of the day. The next most important thing is a *resume* of the commercial, financial, industrial and railroad news of the preceding day collected from the morning newspapers, clipped and pasted upon cardboard sheets for easy handling. A glance at these discloses not only the accumulated news of the previous day, but also the editorial comments of the principal newspapers.

Now the real work of the day begins. This includes the consideration of an endless array of legal, engineering, financial, traffic and transportation questions. The adoption of plans for some extensive improvements in terminal facilities follows closely the determination of a question of general policy. The development of traffic by the extension of the main line and branches, questions affecting the relations with connecting lines, and matters relating to every phase of the vast field of traffic and transportation come up for settlement. The consideration of these diverse matters touches at some point almost every branch of human activity which yields something to the demand of a great system of transportation. The chief enlists in his aid in the decisions of these multiplied issues the thought and skill of his staff, who, having worked out the details, bring before him the results for final approval.

During the illness of a late President of the United States, the caller at the office of a president of one of the great railroads insisted on seeing the chief. The persistent efforts of the attendant to ascertain his mission finally resulted in the statement that he had a sure cure for the ills of the unfortunate man, and needed a special train to convey himself and his apparatus to his bedside. When he was advised that the cost would be near a

thousand dollars, he expressed a harsh opinion of the head of a soulless corporation for allowing such a trifle to stand in the way of the restoration to health of a great patriot. The visit of the pass fiend is a frequent occurrence at the president's office. He never sees the president, but he thinks he should see him.

The head of a great corporation generally occupies a similar position in a number of lesser and allied corporations. There are stated and special meetings of these bodies and committee meetings of the general board that require his presence as presiding officer, and these duties consume considerable time. Even at luncheon he is not always freed from business. The majority of the executive offices are arranged in suites and include an apartment where food may be served. Here the chief gathers about his board officers of his own corporation, visiting officials, or business friends who may be present either by chance or by appointment.

There is a popular delusion that the president's private car is kept chiefly for pleasure jaunts for himself and his friends. But it is as much a workshop as his office, and it frequently affords that privacy and exclusiveness for the transaction of business which are not obtainable even in the private office. An appointment is to be kept in a distant place. The president's car is attached to a regular train, or run "special" as the case may be. The private secretary is directed to report on the car with such mail and papers as demand immediate attention, and the president gets down to work just as if he were sitting at his desk. The despatch of business is uninterrupted. On the car consultations are held and conferences occur between the chief and his subordinates or invited guests. Meals may intervene and social intercourse may break for a moment the monotony of work, but the spirit of business is ever present. The paraphernalia of the workshop, such as maps, reports and official papers, are oftener in evidence on the private car than any of the usual concomitants of a pleasure jaunt.

The hours of the president's afternoon are filled with duties similar to those of the morning. There is no cessation of the work that confronts him as long as he remains at his desk. The official hours end generally at four, and the busy man seeks those social or recreative diversions to which his disposition inclines.

A RANCHER AND HIS FAMILY PICKING LEMONS

In six years this ranch increased in product more than tenfold without increase in acreage. The trees increase in productivity as they increase in size



GROWING AMERICAN LEMONS

WHY AMERICAN IMPORTS OF LEMONS HAVE DECREASED BY MORE THAN A MILLION DOLLARS IN SIX YEARS—A TYPICAL CALIFORNIA RANCH—ITS NATURAL ADVANTAGES—HOW IT GETS ITS WATER—THE STORY OF THE YEAR'S CROP

BY

W. S. HARWOOD

(Illustrated from photographs taken by the author)

NOT long ago Sicily monopolized the American lemon market. Last year California shipped out of the State nearly 600,000 boxes of lemons in nearly 2,000 standard refrigerator cars. With one bound the California ranches have gained part of the home trade; with another they will probably control the rest of it; and with a third they may reach out for foreign markets and, perhaps, sell lemons in southern Europe. It is the natural growth of American industry.

Lemon trees must be free from frost, and in the long strip of land between the mountains and the sea bordering on Old Mexico, all winters are summers. The difference between summer and winter temperature is only about five degrees. So constant is the summer, indeed, that the lemons mature month by

month, the year round. In January I picked a branch from a tree in the largest lemon ranch in the world; on the branch were the delicately scented flowers, the tiny, half-formed lemon, large green lemons and the fresh, yellow, ripened fruit. Sunshine seems perpetual, but it is the sunshine of a temperate climate, not of the tropics, and the lemons gain, therefore, their full measure of acidity. There are already more than 400,000 lemon trees here, fully one-half of which have not yet reached bearing age. There is room for millions of trees in the region.

A few years ago the surface of this great park was a wretched waste of cacti, sage-brush and stunted desert growths—haunt of the tarantula and the rattlesnake. Warmth, equality of climate, sunshine, absence of frost, a generous



A RESERVOIR OVERFLOWING DURING A HEAVY RAIN, WASTING MILLIONS OF GALLONS OF WATER

This reservoir will supply its tributary ranches several years without refilling



PUTTING THE IRON BANDS ABOUT THE WATER-PIPE LEADING DOWN THE MOUNTAINS

The reservoir is far beyond the top, up another mountain

soil, all these the section had naturally, for there must be water. The average rainfall, year by year in this region is slight and is confined to a relatively few days in the winter months. There must be at least twelve inches of water in addition to the average normal rainfall in order to keep a ranch in prime condition. This extra water is held in great reservoirs in the mountains hard by the sides of the mountains gathering up the rains as they fall and sending them downwar in rushing torrents to the vast reservoirs held in check by enormous walls of masonry. Sometimes the rains are so sudden and heavy that the largest reservoirs quickly overflow.

From the reservoirs the water is piped down the valleys to the ranches. At the entrance to every ranch stands a meter which measures the quantity used. The pipes are opened several times a year and the water is allowed to flow in between the rows of lemon trees in little rivulets. It enters the soil and gives strength to the roots. Several hundreds of thousands of dollars are now being expended in this region in making still larger reservoirs farther back in the mountains—some of them will even gain moisture from the snows on the higher peaks, for not many miles distant

from these warm, rich valleys lying in the sunshine are the frost and snow.

But there is still another essential, one which has been too often overlooked in the past, a dual essential, made up of common sense and capital. All the rest may be here and yet much money be wasted, as it has been wasted in generous quantities. There have been many lamentable failures solely because people entered thoughtlessly upon the work. When to all the natural conditions are joined skill, business capacity, capital, the lemons form a very profitable crop. Not long ago I met a man from an eastern state who invested some \$15,000 in a lemon ranch. Four years ago he got out of it with less than \$4,000 left. This season from the same ranch a practical lemon grower is marketing ninety tons of lemons, and the little patch of ground will net him \$2,000 for his year's work.

Many things conspired against the lemon grower in this region a few years ago—lack of sympathy on the part of shippers, apathy of railroads, distrust of the California lemon on the part of the public, a low import duty, ignorance of the business. Today the lemons of this region are in favor; they have passed the test of high acidity; shipping conditions are improved; intelligence is directing the



THE FINISHED WATER-PIPE

business. There is a duty now of one cent per pound—about eighty-five cents per box. Some idea of the competition which these California lemon pioneers have had to face is seen in the fact that, while they pay from \$1.25 up to \$2.00 per day for pickers, the Sicilian pickers receive from thirty to forty-five cents per day, while the women pickers are content with from six to twelve cents; and in the further fact that a box of lemons can be laid down in Chicago from Sicily, so low are the ocean rates, at two-thirds the



A TYPICAL DAM IN THE LEMON REGION

The reservoir in the foreground is partly filled



A SOUTHERN
How the st

freight paid on a box from San Diego to Chicago. Frequently now, so complete has been the reversal of feeling in regard to the California lemon, it brings a higher price than the Italian.

The by-products of the lemon are an important feature of the industry. One large company owning some 30,000 acres in the

lemon valleys near the city of San Diego already begun the manufacture of by-products. Lemon extracts, lemon used in the manufacture of extracts, acid used in soda waters and as a dye in the manufacture of calicoes, Komel, an mented drink, made from the lemon and from the grapefruit which grows with



A LEMON LAND IN ITS NATIVE STATE, SHOWING THE GROWTH OF CACTI
The soil below is rich and arable when it is supplied with water



RANCH

and the cactus-grown desert

success alongside the lemon, are now being manufactured. The processes are largely kept secret.

The picking of the lemons is done mainly by men. Each picker wears a canvas sack strapped to his chest. The sack is open at both top and bottom, the bottom being held in place by a wire. In one hand the picker

holds a clipping-knife, in the other a steel ring two and five-sixteenths inches in diameter. This ring is passed over the lemons before picking. The object is to select only such lemons as are of desirable merchantable size, the medium size which the public demands running from 360 to 420 to the box. The public has a prejudice against large



A BOSS LEMON-PICKER

The measuring ring shows in his left hand above the sack



A SUPERINTENDENT ON HIS ROUNDS OF THE RANCHES ON A LARGE ESTABLISHMENT

lemons; so when a lemon fits the ring it is picked, ripe or green. Of course, all ripe ones are picked, whatever the size. The ripe ones are ready for immediate market, while the green ones are piled away in boxes in warehouses for curing or ripening. It ordinarily requires from four to eight weeks to fit the lemons for the market. As the lemon harvest of this region is continuous, the market is supplied at all seasons of the year.

When the lemons reach the warehouse they are run through a washing-wheel and packed in boxes for storage; or, if ripe, placed directly in the cars. The washing-wheel is about five feet in diameter, with brushes five or six inches long arranged on the outer rim. These brushes pass down into a trough of water as the wheel revolves, and into this trough are fed the lemons. The brushes remove any dirt or slight imperfections. Long strips of wood hold the boxes in place in the cars when ready for shipment, thus preventing any movement in their long journey across the American continent.

This new industry—new because it has been only a few years since it started, while centuries are behind the lemon growers of Sicily—is a new proof of the flexibility, the adaptability of our national resources. In

the year 1892 the United States imported chiefly from Italy, \$4,548,263 worth of lemons. In 1901 the foreign importation fell to \$3,412,308—more than a million dollars' decrease. In 1896 the foreign importation rose to a little over \$5,000,000, while for the first ten months of the year just closed, 1902, the imports were only a trifle more than \$3,000,000. In 1892, when the lemon imports ran at least \$1,000,000 higher than now, the American lemon-growing was but beginning the shipment of nearly 600,000 boxes of lemons from California in 1902, ten years later, suggests the cause for the falling off. It indicates that, with this new industry but in its infancy, it has already reduced the foreign importation by more than twenty-five per cent.

The American lemon-raising industry is carried on amid delightfully picturesque surroundings, rendering none the less attractive this new and significant element in the development of the Larger America. The picturesqueness of this section surpasses that of any other lemon region on the globe. From an elevation here you can look down upon one of the most interesting scenes in the world. In the distance, the purple mountains; far to the left, the sweep of the hills of Mexico; below you, the little lemon ranches, their vivid deep-green accentuated by the brilliant yellow of their fruit, and the whole valley marked off in a great chess-board, as if by the hedge lines of an English landscape; beyond you the sweep of the Pacific, and your eye catches the faint puff of smoke from a mighty battle-ship in the far offing. Here and there below you are the comfortable homes of the lemon ranchers, standing amid the graceful palms, the lofty eucalyptus and the feathery pepper trees. It is like a great park in the warm January sunshine, an ideal place for the workers as well as for the work.



A GENERAL PANORAMIC VIEW OF A YOUNG LEMON RANCH



A LEMON PICKER

In one hand he holds a clipper; attached to the thumb of the other is a gage for measuring the size of the lemon



WASHING THE LEMONS

The lemons are fed into the trough—below the wheel (at the left)—and come out at the right; the brushes on the wheel clean them as they roll along the trough in the water

The development of this particular industry here is but another indication of American resourcefulness—of the growing power of Americans to produce within the national limits of the United States nearly all the necessities and luxuries of life. Already our

imports show that the country is actually dependent on foreign countries for but very few articles, and these very largely such as traditionally cannot be produced in our climate or under our labor system. Every diminution of the list of these articles means added wealth to the nation and prosperous communities where none existed before. Even now in southern California are miles on miles of hills and valleys near the coast baking in the sun and bare but for cacti. They need only water and the practical wisdom of hard-headed men to teem with fruitfulness. Such development is bound to come. The growth of the lemon industry is an earnest of it.



MAKING LEMON BOXES

Five hundred of these boxes are made in one day



LOADING LEMONS INTO CARS WHICH DRAW THEM FROM THE FIELD TO THE PACKING AND CURING WAREHOUSES

A GROUP OF BOYS IN THE SCHOOL BORN IN DIFFERENT COUNTRIES

Sweden
Austria

Greece
Australia

Germany
Canada

Russia
England

China
Italy

Scotland
Rumania



NEW CITIZENS FOR THE REPUBLIC

SCHOOL NO. 1 IN NEW YORK, WHERE CHILDREN OF TWENTY-FIVE NATIONALITIES LEARN AMERICANISM WITH THEIR DAILY LESSONS

BY

A. R. DUGMORE

AT the corner of Catharine and Henry Streets in New York is a large white building that overlooks and dominates its neighborhood. Placed in the middle of a region of tawdry flat-houses and dirty streets, it stands out preëminent because of its solid cleanliness and unpretentiousness. It is the home of Public School No. 1. In it are centred all the hopes of the miserably poor polyglot population of the surrounding district—for its pupils the scene of their greatest interest and endeavor, and for their parents an earnest of the freedom they have come far and worked hard to attain.

The child of American parentage is the exception in this school. The pupils are of the different nationalities or races that have their separate quarters in the immediate neighborhood. If they were to be divided according to their parental nationality, there would be twenty-five or more groups. The majority of the pupils, however, are Swedes, Austrians, Greeks, Russians, English, Irish, Scotch, Welsh, Rumanians, Italians, Poles,

Hungarians, Canadians, Armenians, Germans and Chinese. The Germans, Russians and Polish predominate, for there are a very large number of Jewish pupils.

The most noticeable thing in the school is the perfectly friendly equality in which all these races mix; no prejudice is noticeable. The different races are so scattered that there is no chance for organization and its attendant cliques and small school politics. This is particularly interesting in the face of the fact that the one thing more than any other which binds the boys together is their intense common interest in party and city politics. All political news is followed and every question is heatedly debated in and out of class. This interest in politics and the training in argument and oratory it brings is probably due in large measure to the parents. To them this opportunity for political discussion is an evidence of the freedom of the new country which has replaced the tyranny of the old. The lack of organization and the lack of prejudice is shown by the fact that



CHIN CHUNG, BORN IN CANTON, ENTERED SCHOOL
TWO YEARS AGO

He is now in 6A grade and is president of his class

the "captain" or elected leader of a class composed with one exception of Jewish lads is the solitary exception—an Irish boy. In another class the "captain" is Chinese.

The interest in politics is only one of the evidences of a great desire to "get along in the world." Another is the fact that many of the boys are self-supporting. The number of boys working their way through can only be guessed. They are reluctant to tell anything about their home life or conditions.



WOOD-WORK DESIGNED AND EXECUTED BY BOYS
TWELVE TO THIRTEEN YEARS OLD

The decorations are in colors and are particularly noticeable

It is known, however, that about one hundred and twenty of the six hundred odd boys of the grammar department are self-supporting. A little Italian boy was late one morning as he was asked for his excuse by the principal. After much questioning he told this story. His mother was dead, and his father, who worked on the railways, and consequently was away from home most of the time, could send him only enough money to pay the rent of the two small rooms in which he and a smaller brother and sister lived. To pay for their food and clothing he and his brother sold papers after school hours, making about



A CLASS IN CARPENTRY



AN UNGRADED CLASS IN CALISTHENICS

\$4 a week. The sister did the cooking and the housework. This particular morning she had been ill and unable to leave her bed, and it had taken him so long to care for her and attend to her work that he had been late. This was told quietly and quite as a matter of course. The boy was fourteen years old. He had no idea that his story seemed extraordinary. He had never thought of trying to get help of any kind. This earnestness is carried into all the school work. The boys, because of the sacrifices their schooling brings, realize more keenly how valuable it is to them.

Although the school is democratic, and although the public school has taught them the English language and a certain feeling of Americanism, their race shows itself often in the classroom. For example, the Russian and Polish Jews have a school standing far

out of proportion to their number, and the Italians are unquestionably the most artistic in the manual training shops, while, as we have seen, the Irish talent for leadership and organization is not impaired by the public school. Very often this grafting of Americanism on foundations of foreign family tradition gives rise to very naive points of view—such, for instance, as that of the little Polish lad who gave the following definition of spring: "Spring, which is the first season of the year, is when flowers and business bloom."

The school course is similar to that in all the other public schools. There is, however, one extra class called the "ungraded class." This class is divided into four subdivisions: those for (1) special discipline cases, (2) truants, (3) defective children—physically, mentally or morally, and that for (4) foreign



THE BASKET-BALL TEAM AT PRACTICE

A game on the roof playground—the Brooklyn Bridge in the background

born children who do not speak English. The work done with these boys is perhaps the most valuable single service of the school. Here the entire stress of the teacher's task is given to remedy the individual defect. The children are taught only those things which the teacher believes are within the understanding of each individual. Sand and clay modeling, drawing lines with colored crayons, weaving with colored splints, cutting, pasting and

It is a large task that schools of this kind are doing, taking the raw, low-class foreign boys of many nationalities and molding them into self-supporting, self-respecting citizens of the republic. The amount of this work done by the public schools in New York is indicated by the figures of the immigration bureau, for of the great body of foreigners who come into this country, more than two-thirds come through the port of New



AN UNGRADED CLASS

Pupils unfit for the ordinary classes

using peg-boards are some of the occupations through which the minds are stimulated. Gradually, as they develop, tool and other work is given, and the results are remarkable. Their defect may be of eyesight, hearing, muscular control, speech, moral sense. Some are afflicted with paralysis or epilepsy. Whatever it is, all that can be done to better their condition and to make them self-supporting is being done by tactful teaching.

York, beyond which most of them rarely get. The results shown by the public schools seem little short of marvelous. There are many things in which, as a rule, the public consider that the public schools fail, but the one thing that cannot be denied—and it is the greatest—is that these boys and girls of foreign parentage catch readily the simple American ideas of independence and individual work and, with them, social progress.



HOW A GREAT FREE LECTURE SYSTEM WORKS

HEARERS ENTERTAINED BY THE THOUSANDS IN PUBLIC LECTURES IN NEW YORK—117 LECTURE CENTRES IN THE CITY—YOUNG MEN INTERESTED IN ELECTRICITY, YOUNG WOMEN IN LITERATURE AND HISTORY—DEVELOPING THE SYSTEM AND MAKING SOCIAL CENTRES OF PUBLIC SCHOOLS

BY

GEORGE ILES

ONE dreary night last January, in one of the New York free public lectures, Mr. A. J. Talley presented views of Florence in a public school in East Twenty-seventh Street. To the fourth-story hall had climbed a weatherbeaten old Italian whose features kindled as scene after scene swept the canvas. When the Baptistery was shown, chief among the glories of the great city, the old man whispered, "I batized dere," and added with a sigh, "Ah, I no see Firenze again!" Well-to-do New Yorkers who have seen Niagara in summer, in winter, and in the lovely garb of late October, live among millions of people who owe to the camera their sole acquaintance with the great cataract. Pictures of Niagara are much the most admired in the round of those which illustrate Mr. L. H. Tasker's lecture on the "Great Lakes." One night at Cooper Union, as Mr. Tasker threw on the screen a picture

of Sault Ste. Marie, he told us that a steamer passes through its canal every seven minutes, night and day, during the season of navigation. On my row sat a burly chap grimy with coal dust. His comment, loud as a stage "aside," was, "Hully gee!" It is usual, when a lecture suggests inquiry, to invite questions at the close of the hour. I have known Mr. T. B. Collins to be kept almost another sixty minutes busily answering the queries of the keen-witted Jewish lads who had seen his experiments at the University Settlement Hall, at Eldridge and Rivington Streets. Apart from his Jewish auditors, the lecturer that night had not more than three or four hearers of other races. These incidents show the spirit of the lecture audiences.

In this public lecture system arranged by the Board of Education of New York, the lecturers are men and women of mark, secured on moderate terms because they reside in the

city and can repeat their discourses in different quarters. The audiences come to be informed rather than to gratify their curiosity by seeing an explorer, a novelist or a humorist of world-wide fame. And while the programmes give the place of honor to teachers and scholars, there is a welcome for any one else with capacity to instruct, stimulate and refresh. Nobody begrudges the people a good novel taken from a free library; and it gives them just as much delight to be escorted through the palace of the Alhambra, or to hear a capital tenor sing "La Marseillaise" and "Die Wacht am Rhein." Lives divided between the tenement house and the shop or the factory need all the cheer they can get.

Twenty years ago some of the city libraries charged fees of perhaps a dollar a year. Mark what followed a change of policy. In Springfield, Massachusetts, the charge was abolished in 1885; the next year, with open doors, the users of the library increased sevenfold. So in St. Louis and elsewhere. A dollar is a good deal of money to the average American family. Today the public library is supplementing the public school more and more effectively; the work of both is possible because offered free. Side by side with free libraries are subscription libraries which flourish apace; but their constituency of the well-to-do is a bagatelle in comparison with the throngs at the free counters. In the lecture field, Major Pond, let us say, engages on liberal terms Henry M. Stanley, Ian Maclaren or Mark Twain. He announces a lecture at great cost in the newspapers, sends out circulars by the thousand, and placards the streets with advertising. The tickets, at from one to two dollars, are sold to just such well-to-do persons as take books from subscription libraries. At an opposite pole is the lecture system considered here.

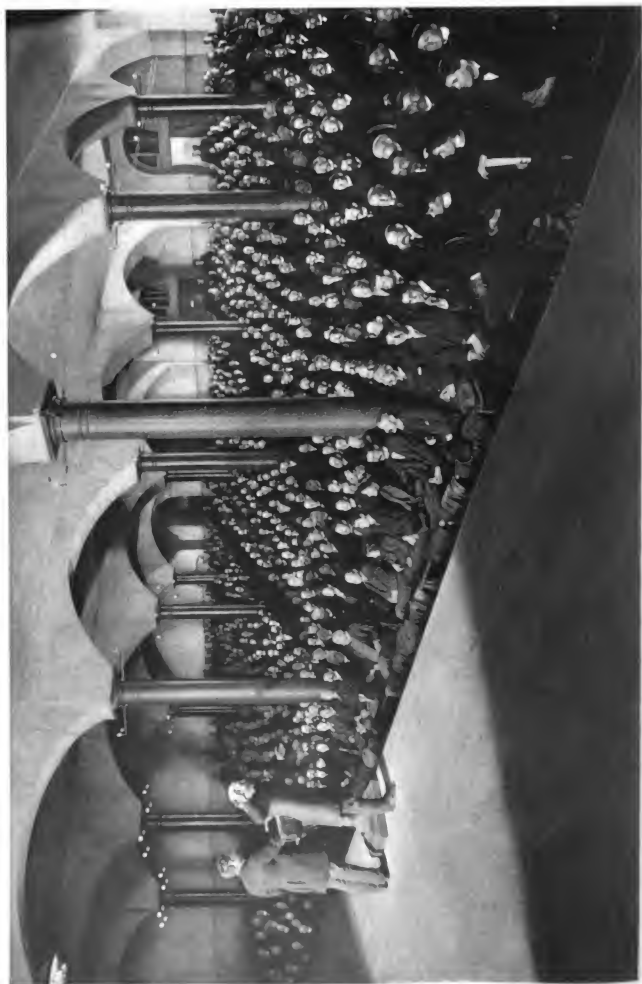
Most of the courses are given in public-school buildings; the great hall of the Cooper Union is occupied without charge, and so are several excellent halls connected with churches; where rents are paid, the terms are moderate. There are today in Greater New York one hundred and seventeen lecture centres, each as well known in the neighborhood as the local sub-station of the post-office; this publicity reduces the expense of advertising. Pocket bulletins setting forth the courses are distributed at the doors of the

lecture halls; placards in big type are posted outside, and by friendly hands in shops and factories near by. Newspapers announce *gratis* the subjects every evening. Thus it comes about that while the cost of a lecture to a lyceum manager may be as much as a dollar a seat, the cost to New York of a public-school lecture this season is about ten cents.

These lectures began in 1889, simply as an experiment, their themes miscellaneous, and only a few illustrated. In 1890, when Doctor Henry M. Leipziger was given charge, the experiment became an assured success. The lectures have steadily broadened in range and constantly improved in quality. The progress of the movement is due to the large-minded men who, as members of the Board of Education, have espoused the cause of adult instruction, such as the Honorable Miles M. O'Brien, late President of the Board, who was the first champion of the lectures; Honorable Henry A. Rogers, Ex-President C. C. Burlingham and General George W. Wingate. During the present season the auditors at the lectures will probably number a million and a quarter, with a lecture staff of five hundred. The stereopticon is always employed when helpful, and experiments are also introduced. Doctor Leipziger plans to give each centre a variety of courses every season, each course consecutive and thorough. In Cooper Union last January and February nine lectures were given on North American geography, five of them on the Colorado River and its Indians, by George Wharton James, the explorer with these were alternated eight lectures on "Electricity," by Doctor E. R. von Nardroff, accompanied by experiments worthy of a college laboratory. At St. Bartholomew Hall eight evenings were devoted to an exposition of "Heat and Its Work," by Professor John S. McKay, and eight to renditions of the best songs of Europe and America, with apt introduction and comment. Particular pains are taken that all the advanced lectures shall lead to study. For example, when Professor William Hallock, of Columbia University, delivers his course on "Light," a neat pamphlet is distributed presenting a summary of his exposition, ending with a brief list of books for study and reference. This aid is invariably extended for lectures of this stamp, whether scientific, literary or on themes of art. So great is the demand at the public libraries



DR. HENRY M. LEIPZIGER
DIRECTOR OF THE NEW YORK PUBLIC LECTURE SYSTEM



THE WELL FILLED LECTURE HALL AT COOPER UNION

for recommended books that the supply there fails, and the Board of Education provides copies at each centre from what Doctor Leipziger calls a "platform library." At a single centre last winter two hundred copies of a standard text-book on electricity were thus lent or sold at cost. One of the Doctor's dreams is that there shall be erected in New York two or three temples of science where, in addition to a fine auditorium, shall be found amply equipped laboratories and workshops for practical application of lecture lessons.

A capital series by Mr. Earl Barnes deals with the "Care and Culture of Children." Doctor Ida Welt gives an attractive account of how foods may best be chosen and prepared. The maintenance of health, the prevention of disease and first aid to the injured are topics always on the programmes. What a voter should know, wisely to exercise his franchise, is expounded in every ward of New York. Courses just established impart this instruction in Yiddish and Italian to immigrants. By way of varying the interest, the departments of the city government are successively described and illustrated, and the courses also treat questions of capital and labor, the trusts and the trade-unions.

But, truth to tell, the audiences like entertainment joined to instruction, and nothing pleases them more than an excursion to Rome, Constantinople, Venice, Paris or London, especially if their guide is Professor Hamlin, of Columbia University, who comments acutely on the architecture they behold. A parallel course, by Mr. A. T. Van Laer, admits the audience to the art galleries of Italy, Spain, France, Holland and England, and shows them the canvases of such American painters as Copley, Stuart, Inness, Hunt and La Farge. Music is as popular as pictorial art. The course by Doctor H. G. Hanchett discusses, with piano illustrations, the materials, methods, merits and masters of musical composition. One of Mr. T. W. Surette's courses brings out with some detail the characteristics of Bach, Handel, Haydn, Mozart and Beethoven, each composer represented by some famous pieces. For literary programmes take two by Mr. Frederick H. Sykes. The first series is Shakspearean, beginning with a sketch of the poet's life and proceeding to studies of "As You Like It," "The Merchant of Venice," "Henry IV.," "Macbeth" and "Hamlet." The pamphlet

distributed at these lectures mentions the chief biographies of Shakspeare and the best editions of his works, and refers to the leading commentaries, commencing with Dowden's as indispensable. In his second course Mr. Sykes takes up great writers of the last century—Carlyle, Dickens, George Eliot, Tennyson, Browning and Stevenson. In fifteen closely printed pages he tells the reader just what he wants to know about these authors, their works, their principal appreciators and critics. What more than this can be done to redeem reading from being desultory and unfruitful? What better ally can the free library count upon?

Turning from the platform to the people, we notice that young men predominate, especially when the lecture touches some practical art of electricity, photography or lithography. If the subject is historical or literary, the larger part of the audience will be young women, many of whom doubtless would attend the high schools if they could. A lecture on the care and culture of children of course draws a matronly group of hearers, escorted by partners not always as attentive as they might be. Naturally enough, the majority of those who come are from the neighborhood. Wealthy districts present fashionable audiences: the hall of the Natural History Museum, near Central Park, attracts just such a gathering as might hear a lyceum lecture. A lecture hall amid tenement houses attracts mechanics, factory hands, clerks, their wives or sweethearts, their mothers and sisters. A hall connected with a church, such as St. Peter's, on West Twentieth Street, seems to have a goodly nucleus of hearers from the parish. I have seen the same listeners again and again at Columbus Hall, adjoining the Church of St. Paul the Apostle, on West Sixtieth Street. These earnest, wistful faces are not borne by the first five hundred men and women who might pass along the street; they belong to church-going people who want to know more than they do and be better than they are. In every lecture-room, wherever it may be, the "tough" of Ninth Avenue or the Bowery, the branded frequenter of the saloon, is conspicuous by his absence. The door is open to all, but as a matter of fact only the thoughtful, the men and women bent on improvement, cross its threshold.

Sometimes a lecture draws from all New

York. How else could pictures of Mont Blanc, the Jungfrau, the Finsteraarhorn keep all eyes a-strain, prompt all hands to loud and repeated applause? Swiss from every ward in the city here revisited together the old home and renewed old memories.

At every lecture one sees the local superintendent moving quietly about. His duties are manifold: he sees to the hall's being properly aired, warmed and lighted; he makes announcements and introduces the lecturer; he reports the number present to headquarters; he maintains order. Once I saw a lad who sat in the centre of an audience begin to make a row. He was reproved in vain. The superintendent then requested the lecturer to pause for a moment; the disturber was taken to the door and asked never to show his face there again. On another occasion two little girls near me persisted in loud talk; I pointed them out to the superintendent, who, without the slightest fuss, ejected them at once. My impression is that these superintendents, who are usually teachers, have duties more important still—in reporting on the quality of the lectures, on the interest or apathy of the listeners. In no other way can I account for the increasing diversity of the programmes, the constant rise in their standards. There is evidently a ceaseless process of trial and of sifting going on. Two years ago I heard a teacher of mark speak in a large hall on the West Side. His theme was important; his presence, voice and manner were exceptionally good. Yet his presentation was so lacking in order that the man was tiresome: until he masters the art of arrangement he is not likely to be recalled. Another evening I heard a speaker fluent to glibness, with all the unction of a political spellbinder; but his story was mere wish-wash, told at second-hand, and without either the pictures or the experiments we had a right to expect. He, too, now stays at home. A third lecturer among the failures was an ancient mariner; his manner and manner were so redolent of the fore-castle and the smoking-room that he was quietly dropped and will be no more heard.

It is with such tireless vigilance as this that in every field where the platform can give instruction, inspiration and initiative Doctor Leipziger has drawn up the programmes with intent to do all the good he can, to do nothing else, and to exercise a spirit of wise

and kind hospitality. He suggested long ago that the schools be opened on Sundays as well as week days, not only for lectures, but as the social centres of their neighborhoods. This suggestion is now taking effect in a few places and may be expected to spread throughout the city. It will then be inevitable that the school buildings be remodeled for their new purposes; and the remodeling will redound to the great benefit of the thousands beyond the school age. Often the lecture audiences of today must climb many narrow stairs to reach a hall on the top story, and then sit on benches made for children. There should be commodious halls on the ground floor, with comfortable seats for adults, and these halls should be light and cheerful, adorned with busts and pictures of merit. Some of the newer school buildings are being fitted up with such meeting places; New York, with its vast corporate wealth, can make no wise investment. In silence a school gives some of its best lessons when it is handsomely built when its furniture and decorations are in good taste. This influence becomes more important than ever as the public schools pass to new breadths of usefulness. Already in New York there are recreation centres, play centres, and they offer instruction during the months of summer which in years past found them closed and idle. Only one American boy or girl in sixteen carries education beyond the sessions of the common school into the high school, the college, the university. The common school is now beginning to open its doors for all the years of life. Let its architecture, surroundings and maintenance at every point mirror the intelligence and opulence of America.

LECTURES DIRECTED BY THE STATE OF NEW YORK

For visual instruction at its best one must go to the lecture hall of the American Museum of Natural History on West Seventy-ninth Street, near Central Park, a model of what such a hall should be. Here are given illustrated lectures under the auspices of the State Superintendent of Public Instruction, with Professor A. S. Bickmore at the Museum as director. He supervises in person the taking of the photographs, which are executed with a skill and delicacy which eclipse everything else of the kind in the world. When necessary the slides are given

the hues of nature. The floral pictures, tinted by Mrs. Cornelius Van Brunt, are of matchless fidelity and beauty. The main intent of the lectures is to inform the people as to their own state, show them what is best worth seeing in other states, in the new possessions of the Union, and in foreign lands. From the long list of lectures we note the picturing of Manhattan Island and the islands of the Hudson, the Catskills and the Adirondacks, the lakes of central New York, the Mississippi Valley, the Yellowstone Park, California and the Yosemite Valley, Alaska, the Philippines, and the Hawaiian Islands. Each lecture begins with a map clearly explained, on occasion followed by a geological chart. A favorite lecture illustrates our native birds; equally popular is a survey of Paris in its various aspects.

When Professor Bickmore gives a new lecture his first audiences are teachers solely; afterward he invites the public, notably on the holidays, which are often days of vacuity and boredom. Faithfully copied, and accompanied by manuscripts for the reading-desk prepared by Professor Bickmore, these lectures are doing duty in forty-four cities and twenty-seven villages of New York. And far beyond New York their services extend. Fifteen other states of the Union, Canada and India are beneficiaries of the system. Each of these commonwealths may buy one set only of such slides as it chooses, at cost, which is about \$75 per lecture. Two rules are imposed: the lectures must be given in connection with the free common schools and without charge for admission. The home demand for slides is so great that applicants elsewhere are not likely to be satisfied until 1904.

In 1900 a Bickmore lecture and its colored pictures were exhibited at the Paris Exposition; they received the gold prize, and Professor Bickmore was invited to take part in the Conference for Nature-Study held in London last year. There the County Council, which directs the education of the British metropolis, heard with interest Professor Bickmore's illustrated account of his work in New York. Part of his exhibit was a series of photographs of London; on these the Council laid hands for a round of lectures modeled on those of the Empire State. At Berlin, Baron Ferdinand von Richthofen, the official head of education in Germany, is to incorporate the Bickmore methods in

the popular instruction of the German Empire. At home the Bickmore pictures have suggested how the courses of the public schools may be broadened and enriched. In New York city the Board of Education is giving every school a stereopticon for such lessons as may be the better understood and impressed by its pictures. The large array of slides accumulated by Professor Bickmore will form an important part of the material for these school lanterns. One series of colored slides, seventy-two in number, is for kindergarten and primary instruction.

In 1898, through the hospitality of the state of New York, its pictures, which include several Canadian series, began going across the border to Canada. From Montreal as the centre, the lectures extended during the past winter to no fewer than forty-eight places, including seven mining and lumbering camps in Ontario. The Montreal committee asks nothing more of its correspondents than that they shall pay the carriage of slides and return them punctually in good order. Their scheme is joined to a round of traveling libraries, bringing redoubled light and cheer to many an outlying camp and village.

FREE LECTURES AT THE PEOPLE'S INSTITUTE

Cooper Union, at the head of the Bowery, since 1859 has stood as the centre of free education in New York. Its classes in art, in applied science, in literature, have instructed thousands of men and women who owe to this foundation the chief debt of their lives. The great hall, with its sixteen hundred seats, has always been a forum for the people. From its platform, in 1860, Abraham Lincoln declared his convictions regarding the extension of slavery, and outlined his policy. To name the statesmen, agitators and reformers who since have spoken here would be to catalogue the men who have swayed and molded public opinion in America for the past forty-three years. In 1897 a group of leading citizens decided that this hall should become more than ever a popular forum for the discussion of problems economic, social and ethical. They accordingly founded the People's Institute, with Professor Charles Sprague Smith, who held the chair of modern languages and foreign literature at Columbia, as director and mainspring of the work. He chooses themes of prime current interest and has them treated by men of the first rank.

During the past winter the long and varied programme offered such themes as "Remedies for Trusts," presented by Professor J. W. Jenks, of Cornell University; and "Imperialistic Democracy," by Henry D. Lloyd. When a debate took place on Socialism between Professor E. R. A. Seligman, of Columbia, and H. Gaylord Wilshire, more than three thousand hearers were present, packing the hall as it never was packed before. Another debate, attracting a vast audience, considered the pros and cons of the "Single Tax," Professor John B. Clark, of Columbia, and Louis F. Post, editor of the *Public*, Chicago, facing each other in courteous combat. Following every lecture and debate the auditors are invited to ask questions. They do so freely and candidly, with the effect of bringing out facts and arguments which academic persons seldom hear, and of showing how common is the lack of elementary information regarding economic facts. In some of their features these assemblies recall the old-time town-meeting. Votes are taken on important questions of reform, and these are duly brought before the lawmakers concerned, and not without effect. The Tenement House Commission had the unanimous support of the People's Institute, and

so has the movement for the abolition of the labor of children in New York. On Sunday evenings crowded houses listen to ethical discourses, always followed by free discussions.

Some other distinctive features of the Institute are worth noting. It gives symphony concerts, rendered by a capital orchestra of fifty performers. The cheapest tickets are but five cents each, if bought for a series of six concerts. A club, with rooms in East Fourteenth Street, numbers nearly four hundred men and women; the monthly dues are forty cents; its classes are maintained the year round. In the heat of summer, when "everybody" is supposed to be out of town, there are more than three millions left in the dwellings of New York, about half of them in tenements at that. The Cooper Union courses of lectures include many apart from those of an economic or social type, systematic programmes deal with art, science and literature on approved lines. Excursions are arranged to places in New York of historic interest and to the Metropolitan Museum of Art. The Institute has a flourishing branch at Harlem, founded in 1901, and directed by Mr. John Martin. The total expenses of the Institute for the past fiscal year were about \$11,000, defrayed by subscription.

THE NEW DEPARTMENT OF COMMERCE AND LABOR

THE IMMENSE MACHINERY OF MR. CORTELYOU'S NEW DEPARTMENT—SYNTHESIZING SCATTERED BUT ASSOCIATED BUREAUS—THE BUREAU OF CORPORATIONS AND ITS "TRUST" INVESTIGATION—PROMOTING OUR FOREIGN TRADE

BY

FREDERIC EMORY

CHIEF OF THE BUREAU OF FOREIGN COMMERCE, DEPARTMENT OF STATE

FEW persons, probably, realize the magnitude of the machinery and *personnel* of the national Department of Commerce and Labor which is being organized under the recent act of Congress. It is estimated that, when it is in full working order, the new Department will have a staff of some fifteen hundred employees at its headquarters in Washington, and about ten

thousand, including both permanent and temporary appointees, chiefly in the Light-house Establishment, outside of the Federal capital. Great as is this force, the number of places to be filled will be relatively small, for the reason that but two new bureaus—the Bureau of Corporations and the Bureau of Manufactures—have been created, and it is understood that, for the immediate

future, at any rate, the needs of these bureaus will not involve many appointments. Some time will probably be occupied mainly with the work of organization and the development of plans of action. The great bulk of the force, therefore, will be made up of clerks, messengers, etc., already on the Government rolls, who will be transferred from other departments, as part of existing bureaus to be included, on the first of July next, in the new organization.

It is fortunate for Mr. Cortelyou that, as the first head of the Department of Commerce and Labor, he will be relieved at the outset of the task of making a large number of appointments. He will have enough to do in rearranging and adjusting the working parts of the vast machine he is to control, and setting in motion and giving the proper direction to the new apparatus. He is fortunate, also, in the fact that he is not compelled to burden himself with the operation of the bureaus to be transferred, until the first of July. By this he has four months of comparative freedom in which to mature his plans. But his resources will be heavily taxed, for the problem before him in the mere work of preparation is complicated and delicate. He will be called upon to coordinate and harmonize a great variety of interests and to bring into line with his general scheme of administration a number of important bureaus which have heretofore had a more or less independent existence and power of initiative. The discretion, tact and ready spirit of accommodation which he has shown in the discharge of his duties in the White House would seem to fit him especially for doing this work. Happily, he will have the cooperation of a number of trained and able officials, as well as of new men, who will doubtless be selected for their special aptitude and fitness.

THE WORK OF THE DEPARTMENT

It is hardly necessary to enumerate the functions of the Department of Commerce and Labor. They are indicated broadly by its name, and may be said to include almost every important agency of the Government which has to deal with industry and trade. The Department of Agriculture, which has some divisions more or less related to these subjects, is the only Department that will not transfer part of its work. The exception was

made, no doubt, because many of its functions are more natural parts of the Department of Agriculture. It was proposed to include the Interstate Commerce Commission, but Congress finally decided to maintain it as an independent body. The State Department contributes its only commercial bureau—that engaged in the publication of the Consular reports—and from the Treasury everything is taken that could well be utilized in the new Department, including the Bureau of Statistics, which compiles the figures of exports and imports and a variety of other commercial data; the Bureau of Navigation, dealing with our merchant marine; the Steamboat Inspection Service; the Light-house Establishment; the Alaskan fisheries; the Bureau of Immigration; the Coast and Geodetic Survey, and the Bureau of Standards. The Treasury is practically relieved of nearly all its extraneous duties. It reverts to its original and proper functions with the exception of the Life-Saving and Marine Hospital Services, which it will continue to control. The Interior Department contributes the Census Office; and the hitherto unattached Department of Labor and the Fish Commission are also brought into the new Department.

Owing to the recent agitation of the trust question, public interest has naturally centered in the new Bureau of Corporations, which is charged with the duty of investigating the organization and management of corporations, joint stock companies and corporate combinations, except common carriers, subject to existing law, that are engaged in commerce among the several states and with foreign nations, and of making public the results. There has been some criticism of this provision by advocates of trust legislation on the ground that it does not go far enough, confining itself, as it does, to securing publicity as to the operations and methods of "combines." On the other hand, there would doubtless have been strong opposition on the part of many who have no love for great corporations to giving a Federal bureau large discretionary or restraining powers. It will probably be found that more real progress will have been made by first collecting the facts indispensable to wholesome legislation than if the bureau itself had been charged with the duty of providing remedies.

ITS EFFECT ON FOREIGN TRADE

So far as the ordinary currents of our commerce and industry are concerned, the new Department will probably be most helpful in giving a fresh impetus and, what is needed most of all, an intelligent and systematic direction to the expansion of foreign markets for our manufactured goods. Our exports of food supplies and raw materials need little aid or stimulus, since they are prime necessities which industrial nations must obtain from us, according to their requirements at any given time. Those requirements depend upon conditions beyond our control, such as the abundance or failure of crops or the extent of a nation's purchasing power determined by the degree of prosperity or of business depression it may be experiencing. The usefulness of government machinery, therefore, must be limited to removing purely artificial obstructions to the extension of our sales or to pointing out new channels of demand or the special needs of different fields of consumption. It is doubtful, too, whether the new Department can add much to the sum of knowledge of our domestic trade or industry which will be of practical benefit to the average business man, but it can and doubtless will collate this information in a more convenient form.

When we consider the capabilities of a well-organized Department of Commerce as an agency for increasing our exports of manufactures, however, its probable usefulness is at once seen to be broad and far-reaching. Our manufactured goods, it is true, like our food-stuffs, are selling themselves because of inherent qualities which commend them to foreign consumers, but they cannot be regarded as necessities to foreigners, and they are, moreover, subject to a competition on the part of other industrial nations which is likely to become much keener. The Department of Commerce will therefore have a double part to play. On the one hand, it will be its province to keep our manufacturers and exporters informed as to conditions abroad and the special requisites for obtaining the largest possible share of the world's trade; and on the other hand, it will be able to direct and give full effect to an intelligent propaganda in foreign countries for making known the distinctive merits of our wares. Its main reliance for some time to come will be our consular service, which,

notwithstanding its alleged shortcomings, is now generally conceded to be doing valuable work in both directions.

Under the new organization, the consular officers will continue to be subject to the direction of the Department of State, but the latter is to cooperate with the Department of Commerce and Labor in utilizing them as agents for obtaining industrial and trade information. The new Department is to publish and distribute their reports, and with its larger facilities will doubtless be able still further to extend and improve a service which has practically reached the limit of its development with the resources at the command of the Department of State. In course of time, perhaps, the labors of the Consuls, who are even now overburdened in many instances with inquiries, from our business interests, will be supplemented by the employment of special agents in foreign countries similar to those appointed by the British Foreign Office, but possibly with larger powers. There may be, also, commercial *attachés* at the principal embassies and legations.

A VAST FIELD FOR FUTURE DEVELOPMENT

The results already accomplished, with but little systematic effort, in extending the sales of our goods even in countries where, at one time, the prospect was least encouraging, would seem to indicate that we have before us a vast field of development, if the proper means are taken thoroughly to cultivate it. To individual enterprise, of course, must be left the actual work of cultivation, but the Federal Government is now provided, for the first time, with efficient machinery for fully doing its part as an auxiliary. How great that part may be is appreciated only by those who have become familiar, through the consular reports, with the great waste of effort due to ignorance or misdirected energy on the part of our business men seeking foreign markets for their goods, and with the golden opportunities which are so often neglected because we have no one great central repository of the information required. There has been no lack of such information in the past. The great trouble is that it is distributed among so many bureaus that it is obtainable only by piecemeal; so that, for example, if one wished to learn a group of facts more or less closely related, he might

have to apply to the Bureau of Statistics of the Treasury, the Bureau of Foreign Commerce of the State Department, the Census Office, the Department of Labor, and so on, and would, perhaps, have to sift and analyze a mass of data furnished from these different sources before he could arrive at general results. It has often happened, moreover, that the work of different bureaus has overlapped, producing confusion and waste in the duplication of matter.

With all work of this kind combined and properly classified in a single department, as will now be done, it should be possible to answer inquiries of the most comprehensive character promptly and with full details.

If to this faculty of judicious concentration the Department of Commerce and Labor adds, as it probably will, a diligent coöperation with organized bodies, such as boards of trade, commercial expositions and museums, manufacturers' and export associations, etc.—in other words, all the rapidly multiplying representatives of our industrial interests generally—it may easily become all that its projectors have hoped for it as an engine of commercial progress and expansion. This may be done, too, without its necessarily developing those paternalistic tendencies

which in some quarters have been regarded as likely to make of it an incubus upon private enterprise and initiative. At any rate, it will supply, almost immediately, the pressing need of the hour in bringing to a focus the manifold energies, now more or less divergent or undeveloped, which have been groping for the key to concerted action in promoting our foreign trade. It is to foreign trade that we must look for a safe and profitable vent for our rapidly augmenting industrial output.

Prosperous as we now are, we may soon be face to face again with a heavy excess of production, and if we would not then see many of our factories idle and our labor only partly employed, we must in the meantime make wider and deeper the export channels which alone can relieve us of the surplusage. Our endeavors to do this, so far, are almost wholly parochial and inconclusive, for the reason that we have had no common rallying point, no national pivot of action. With a department of the Federal Government specially equipped for guiding our export activities, and setting the example, in itself, of concentration and directness of effort, we ought now to be able to exert the full force of our undoubted capabilities in international competition.

GEORGE BRUCE CORTELYOU

THE HEAD OF THE NEW DEPARTMENT OF COMMERCE, WHO, OUTSIDE OF POLITICS, HAS RISEN TO HIGH OFFICIAL POSITION BY CLEAR-HEADED METHOD AND CAPACITY FOR MUCH WORK

BY

DAVID S. BARRY.

A GROUP of senators and newspaper correspondents were chatting in a committee room at the Capitol the other day about the Secretary of the new Department of Commerce and Labor, when one of the senators remarked, "In my experience in public life I have never known of any man except George B. Cortelyou who, without political experience or influence, representing nobody but himself, without a political, social or financial 'pull,' without ever being asked whether he was a Republican

or Democrat, had reached a high political office on his merits alone."

Mr. Cortelyou has not held many offices in Washington. When he was a stenographer in the Post-Office Department he did not dream of ever becoming secretary to a President. When he was appointed secretary he had no thought of becoming a member of the Cabinet. During the McKinley administration, when Charles Emory Smith talked of resigning, Henry B. F. Macfarland, President of the Board of Commissioners of

the District of Columbia, sent a despatch to his paper one night stating that Mr. Cortelyou, then President McKinley's secretary, might be offered the Postmaster-Generalship. The uninformed who read the despatch laughed at it, and it was soon forgotten. A few persons, however, who had heard President McKinley talk about Cortelyou, saw nothing improbable in Macfarland's despatch. Nothing more was heard of the matter until one day last spring two newspaper correspondents went to the White House to ask President Roosevelt about the probable success of the group of western speculators who were trying to get Secretary Hitchcock out of the Interior Department. The President said that Mr. Hitchcock was an honest man and would remain; but when he was asked who would succeed him if the influences at work against him should ultimately succeed, Mr. Roosevelt turned on his heel in his impulsive, characteristic fashion and said:

"Cortelyou, step here a moment." Drawing the three friends about him—for the room was filled with people—the President said: "Whenever a vacancy shall occur in the Cabinet it is my purpose to appoint Mr. Cortelyou if he will accept, and I want that distinctly understood." Mr. Cortelyou smiled and went back to his desk. The correspondents published what the President had said, but very few people believed it. When the Senate passed the bill creating the Department of Commerce and Labor, it was held up in the House for some time because of the opposition of a number of Congressmen who wished to have it arranged in advance that one of their number should get the new Cabinet place. It took a long time to make them believe that the President really intended to appoint Cortelyou.

Mr. Cortelyou—not *Cor-tel-you*, although that was President McKinley's pronunciation of the name—was born in New York city on July 26, 1862. His father was a well-to-do business man, who sent his boy to the Normal School at Westfield, Massachusetts, to prepare for Harvard, after he had passed through the grades of the public schools in Brooklyn. Young Cortelyou took up the study of music, and after that stenography. Then he became Supreme Court reporter. In 1889 he was appointed a stenographer to the Post-Office Inspector for New York city, and two years later confidential stenographer to the Surveyor

of the Port of New York. In the same year he came to Washington as stenographer in the office of the Fourth Assistant Postmaster-General. Just before he went to Washington Thomas C. Platt offered to make him his private secretary, an offer which, on consideration, Mr. Cortelyou declined. In 1893 President Cleveland wanted a good stenographer at the White House to take the place of Robert Lincoln O'Brien. Casting about to find one, Postmaster-General Bissell spoke of Cortelyou as just the man for the place. It was found that he was a Republican hold-over who had been appointed under the Harrison administration. Cleveland said he did not care anything about that, and Cortelyou went to work as stenographer and assistant to Henry T. Thurber, then the President's private secretary. He was promoted along with other clerks until he came to be assistant secretary under John Addison Porter, secretary to President McKinley. The newspaper correspondents were the first persons outside of the White House to discover that Cortelyou was gradually becoming the real secretary. Mr. Porter's health was not good, and after awhile he broke down and was forced to resign. From that time began the rise of Mr. Cortelyou in the esteem of the important men who had an opportunity to discover his merits.

A gentleman who sat next to Mr. Cortelyou at a Gridiron Club dinner a few years ago said the next morning:

"That man Cortelyou is about the most solemn proposition I ever ran up against."

It was a very natural estimate. Cortelyou looks solemn and he never laughs aloud. He is a good-looking man, but he might easily be taken for a minister or a college professor. He is well built and as straight and supple and graceful as an Indian. His head is very round and covered with thick, black hair, fast turning gray, brushed straight up from his forehead in pompadour style. The real secret of Mr. Cortelyou's power lies perhaps in the fact that he listens to everything that is said to him and forgets nothing. In addition, he has a well-trained mind. He has so systematized the things he has learned that it is like pigeon-holed material—always ready for use. Although he laughs little and never heartily, Cortelyou has a very attractive smile. When he talks he looks one square in the eye and answer

in a low voice, but directly to the point. His solemnity is easily penetrated by a good story or a joke, and no President's secretary ever appreciated the humorous features of life in the White House more than Cortelyou. He can say yes or no with equal firmness and good nature; and in his faithful devotion to McKinley and Roosevelt, the two Presidents whom he has served, he never forgot that they were human after all. His admiration for them never grew into worship.

One of Cortelyou's most valuable assets is and always has been his remarkable ability to work and work hard twelve or fifteen hours out of twenty-four and come up smiling after a few hours' sleep. His habits of life outside his office are just as regular and abstemious as when he is in it. He eats, drinks, smokes, talks, laughs and does everything else in the same quiet, temperate, contained way. He has so schooled himself to conceal what is going on in his mind that there is not the slightest doubt in the world that if he were at his desk and the report should come to him that President Roosevelt had fallen from the top of the Washington Monument he would with mechanical calmness order the proper person to send an ambulance.

Mr. Cortelyou's ability to withstand hard, continuous physical and mental work and to subject his mind and his body to wearying strain was first put to the test during the Spanish-American War in 1898. He was even then the real secretary to President McKinley, and during all of that long hot summer he performed an enormous daily and nightly task. In those days when the telegraph office at the White House was a war chamber, when there were hourly meetings of the Cabinet day and night, and when every act performed by the Government had a world-wide interest, Cortelyou was President McKinley's right hand. He was at the White House at nine o'clock or shortly after every morning; he left it between six and seven in the evening; he was back about half-past nine and did not depart much before one in the morning. In 1899 the Philippines war made conditions similar; in 1900 it was the Chinese war that made the doings at the White House the important things of the world. During all this time the mental and physical strain upon President McKinley and Mr. Cortelyou, who had been made his secretary in the spring of 1900, was prodigious.

Cortelyou was eyes and ears for President McKinley in those days, as he has been for President Roosevelt since. He saw every man, woman and child who entered the President's office and knew what they came for and what they got. He read every message that came and went by wire, post or messenger, and kept the whole great game in his head as a player at chess does. Where McKinley went he went, always by the President's side, acting as an intermediary between him and the people.

On that September day in 1901 when McKinley was shot down by the hand of an assassin, it was Cortelyou, strong, cool and clear-headed, who gave the prompt orders that took the stricken President to the hospital and placed him under the surgeon's knife within an incredibly short space of time after the shot had been fired; and it was he who so thoughtfully arranged for the interview between the wounded President and his wife that called forth the sympathy of the world. From that day until McKinley was laid to rest in the flower-strewn cemetery at Canton there was practically no rest, day or night, for Mr. Cortelyou. The terrible anxiety, the mental worry, the actual work performed by him will never be known except by those who were within the circle at Buffalo. Returning to Washington after the funeral, Mr. Cortelyou said to a friend that he was tired in mind and body almost to the breaking point. But he did not show it. He was as calm and suave and neat and self-contained as if upon a pleasure trip. The Canton train reached Washington early in the morning, and an hour later Theodore Roosevelt was sitting in the President's chair as self-reliant as though there had not been a tragedy at Buffalo. He took up the work that the murdered President had laid down, and there by his chair was Cortelyou, who from that moment became the central figure of a programme of executive strenuousness perhaps never before known to the American people.

President Roosevelt does not spend as many hours a day at work as President McKinley did, but he works more rapidly. Mr. Roosevelt has no systematic regularity about his methods either at work or at play. He is likely to do the unexpected thing. Cortelyou is just the opposite of Mr. Roosevelt. He never hurries and he never is excited. He keeps himself in perfect physical

trim without taking any systematic exercise. Mr. Cortelyou does not ride horseback, or take long cross-country walks, or fence or box, or play single-stick or chop down trees. He "saws wood" all the time, it is true, but he never swings the ax. He rides to his modest little home over on Capitol Hill in the unfashionable part of Washington, and he has probably spent less time in the open air during the last five years than any other man in the city of Washington. He has never had a real vacation since McKinley became President, and has done none of the things that the doctors say one must do to be well except that he is temperate and regular in all his habits.

Mr. Cortelyou has a charming wife and four children, two boys and two girls. All of his time not devoted to his public duties he spends in their company. He belongs to no clubs except the New York Press Club, and to no secret societies. He takes no part in the social life of Washington except to participate in such official functions as fall to his lot in his official capacity. He attends the Presbyterian Church, and the children go to the public schools. Mr. Cortelyou will receive \$8,000 as a Cabinet officer instead of \$5,000 as secretary to the President, and he may find it necessary to move from Capitol Hill into a more accessible part of Washington.

In no respect has Mr. Cortelyou been more valuable to the late President McKinley and to President Roosevelt than in his relations with the newspaper men in Washington. He has accomplished a great deal in the way of creating and maintaining a good feeling between them and the Administration. He never slaps them on the back or calls them "old man," but he always treats them fairly and squarely. It was under Mr. Cortelyou that the practice was inaugurated of having the President talk frankly with newspaper correspondents about public affairs. This was President McKinley's policy, and it has been followed by Mr. Roosevelt very liberally. President McKinley was not as accessible to the newspaper men as President Roosevelt is. He did not let them see him off-hand so frequently, but he was always ready to receive a reputable newspaper correspondent if the nature of his visit was important enough for him to demand an interview. But President Roosevelt talks to the newspaper reporters with nearly as much freedom as he

does to the members of his Cabinet. It is his way, he says, of keeping things secret. Like President McKinley, and unlike President Roosevelt, Mr. Cortelyou never replies to a statement put to him until he has listened to everything the person making it has to say. He listens as patiently and good-naturedly as if he really enjoyed it. His replies are always to the point.

It was during Mr. McKinley's term of office that Mr. Cortelyou inaugurated the practice of turning a railroad train into an executive office during a presidential trip, and handing to the newspaper men on the train, with a very few minutes' delay, a type-written report of everything said and done at each stopping place, recording not only the speech-making, but the human incidents. This is a great convenience to the reporters and it is very important to the President. It puts before the country systematically and completely a correct report of all he says and all that is said to him.

One of the President's friends expressed surprise the other day that he should appoint as a member of his Cabinet a man who is not a politician. But a senator who was present said that Cortelyou was the best politician he ever knew. Cortelyou is a consummate master of the science of politics, he said. However that may be, it is certain that Mr. Cortelyou is a good judge of human nature, and he generally values a man at his worth. The manner in which he intends to conduct his new department was well illustrated the other day. A friend said to him that he supposed a good place would be given to a mutual friend of theirs. "No," said Mr. Cortelyou, "I doubt if he has the kind of ability the thing needs." He went on to say that the employees must be able to do intelligent, painstaking work or he would not have them.

Political influence will, of course, have some weight with Mr. Cortelyou, but he will have no idlers and no incompetents. Since the breaking out of the Spanish-American war the clerical work of the White House has greatly increased and expanded, but frequent visitors to the White House see nothing of it as they transact business with the calm, quiet, level-headed man who manages it all. The public may hear more of him in the future as one of the twentieth-century captains of industry.

A VAST MACHINE FOR SOCIAL BETTERMENT

AN IMPARTIAL INVESTIGATION OF THE YOUNG MEN'S CHRISTIAN ASSOCIATION—THE QUALITY OF ITS MEMBERSHIP—HOW IT EDUCATES FOR THE POLICE AND FIRE SERVICE AND BENEFITS THE SAILORS—RELIGIOSITY SUPERSEDED BY PRACTICAL HELPFULNESS

BY

RAYMOND STEVENS

A T a recent civil-service examination for positions on the New York police force a candidate was asked, to test his ability to answer the questions of the public, how he would go from City Hall to the Metropolitan Museum. He said, "I'd ask some cop what car to take." Similar incidents served most of those who heard of them merely as jokes, but it occurred to officers of a certain organization of which President Roosevelt lately remarked, "It combines decency with efficiency," that in the training of men for police and fire department places lay a field of very appreciable usefulness. Young men were invited, accordingly, to join classes to study elementary civil-service subjects and to gain the physical strength required. And now in a commodious building on the Bowery in New York such a class is at work every evening, and of the 125 men on the last police force civil-service list in New York city, fourteen came from this single little group. Such a manifestation of practical helpfulness, combined with successful effort in a hundred similar fields, emphasizes the expansion of the Young Men's Christian Association, the organization that is carrying on this work in New York and elsewhere, far beyond the narrow conceptions of its founders.

An organization whose sole business is the making of men better, and which has, according to its last report, property worth \$30,000,000 and a membership of 300,000 young men and boys, deserves an investigation of its methods, *personnel* and results. Greater New York has thirty-three branches of the Association, covering its most important fields of activity; here such an investigation was made.

The West Side branch has one of the best equipped buildings in the city, and is typical. This branch has more than 3,500 members, whose average age is twenty-three years. Most are clerks and office employees and are fairly representative of their class. Some are the typical Sunday-school youth, vapid and lacking in virility, but these are not so numerous as to color the Association. The many practical advantages attract also men of more manly stamp. The Young Men's Christian Association, partly supported by benevolence, is evidently for men of moderate means and the less fortunate in early advantages or home environment, yet many men in no need of its help do association work from philanthropic motives, as college men go into settlement work. Any respectable young man may join. About 1,500 men at the West Side branch are not church members, and of the rest one-half are Catholics.

Twelve hundred men belong to the physical department and take regular exercise. Besides the usual class-work, boxing, wrestling and fencing are taught. Last year 111 entertainments and lectures were given with a total attendance of 21,000, also 210 religious meetings with an attendance of 30,000. Such eminent churchmen and laymen as Doctor Lyman Abbott, Doctor Rainsford, Jacob Riis and Colonel Leonard Wood were among the speakers. Some of the Sunday meetings in Carnegie Hall were the largest meetings for men alone ever held in New York city. The Association runs a free employment bureau. The West Side, the Bowery and the Twenty-third Street branches last year secured 3,766 situations.

The West Side branch has 650 men in its night-schools. Since most of its members

are young men who had to go to work early and without special training, the courses are usually very practical, commercial and technical courses predominating. There are seventy-five college graduates in this one night-school, even from such institutions as Harvard, Princeton, Yale and Columbia, studying commercial courses that the colleges do not teach. Here is a typical case of what the Association aims to do. A clerk working in a dry goods store at \$5 a week, after taking a course in mechanical drawing, secured a position through the Association Employment Bureau in an engineer's office with a salary to begin with of \$8 a week, and also the chance to do all the extra work he wished to at \$1 an hour.

The Twenty-third Street branch not long ago opened a successful day-school which will probably be imitated in other branches. It has nearly one hundred students, and is really a thorough business college open to members at a merely nominal cost—for \$3.50 is about the average fee for all Association courses.

A standard examination is held in all Association schools so rigid that more than a hundred universities, colleges and technical schools, including the State universities of Maine, Indiana, Oregon, Washington, Colorado, Georgia, Mississippi and Louisiana, accept the Association certificates in lieu of entrance examinations.

The Naval Young Men's Christian Association has a different problem to meet. "Jackies" have no need of gymnasiums, no opportunity for study and, generally speaking, no religious interests. They are not more given to dissipation than the average man, in spite of a rather common opinion to the contrary. After months of strict discipline and careful living, very naturally many turn their liberty into a spree, and thus their misdeeds are emphasized. There are, of course, some men with fixed habits of dissipation, but more are led to saloons and cheap "joints" chiefly from the lack of any better places to go to.

The Brooklyn Naval Building, opened last May through the generosity of Miss Helen Gould, is probably the finest inexpensive club in the world. Besides the usual facilities, it has a rifle-range, pool and billiard tables, a barber shop, a camera-room and a large number of storage lockers. Asked how he liked the place, one sailor said, "My clothes

fit me better here than in any other place I go to." Another said, "I didn't come here for months—I thought it was one of these 'd——d missions, but this place is all right." These remarks indicate two reasons why the Young Men's Christian Association has attracted sailors. Here they are made to feel at home, while in most places, even in our democratic community, they are not wanted—a fact that leads many, against the rules, to wear citizen dress on shore. They object to charity and hate attempts to save their souls. They pay a large part of the running expenses themselves, and they do not have religious thrust upon them.

Last Christmas twenty-five men from Newport and a few from Norfolk came to the Brooklyn branch to spend the day, just as they might have gone home if home had been accessible. In the first six months the average daily attendance at the building has been 365 and the average number of lodgers 125. Most of this time only a receiving-ship and a gunboat or two were in port. But while the Atlantic Squadron was at Brooklyn last August, some nights nearly a hundred men slept on the hall floors, and even more were turned away. One saloon close to the Navy Yard has closed since the Young Men's Christian Association opened its building; and one Raines hotel-keeper told the hotel inspector on his last trip that he was going out of business. "I haven't let a bed to a sailor since that Young Men's Christian Association got in," he said.

A Brooklyn policeman takes an intoxicated sailor, not to the station house, but to the Association building, where he is cared for. One sailor, who had been robbed of his money and left unconscious on the street, was found by a secretary and taken to the Naval building, sobered off and hurried back to ship in time to keep his liberty leave unbroken. The next day he wrote: "This has taught me a lesson. I promise you never to taste of intoxicating liquor again. Also, I shall leave an allotment with you to help me save, as I cannot do it without help."

The "allotment" refers to an arrangement whereby a sailor can assign a part of his wages to the Young Men's Christian Association, which encourages saving by putting the money on interest with trust companies. In this way the Brooklyn branch

receives more than \$5,000 a month. It even acts as general business agent. Letters come every day from all over the world with a great variety of requests. "I want \$50 at once. I got into trouble ashore," wrote a sailor from Hongkong. Another was more explicit: "Send me \$20—our boat lost the race." Another asked the secretary to subscribe and pay for a half-dozen leading monthly magazines. One sailor wanted the secretary to buy him a farm in Michigan—location and choice left to the judgment of the secretary.

The men seen about the naval building are older, hardier, and, if rougher, also more virile than the usual Young Men's Christian Association man. They look as if they could fight better than they could pray. The religious work is mostly done by individual efforts, rather than by general exhortation. Any sailor may become a member, irrespective of religion or lack of it. Moreover, the building with all its advantages is open to any enlisted man, whether a member or not.

Most college associations run an employment bureau for the benefit of students working their way. At Columbia, which has no dormitories, the association found last year boarding places for more than 400 men. But their chief work is to interest and train men for philanthropic work. Said J. C. McCracken, the famous University of Pennsylvania football player, now secretary of the Columbia branch: "I do not believe any man can come out of college a better man morally than when he entered if he does not associate himself with some religious organization and do active work in it. That is what the college Young Men's Christian Association is for." At Harvard more than 100 men are engaged in settlement work among the poor in Cambridge and Boston.

The railroad branches in New York do little educational and religious work, as the members are practically all transients. The men who drop into the buildings for a few minutes' loaf, or a dinner, or for a bath and a sleep, represent the rank and file of railroad men, and not the few religiously inclined. From sixty to seventy-five per cent. of the men available join. More than half are Roman Catholics. "We don't preach men away," said a railroad branch secretary. "There have been Young Men's Christian

Associations that ran their religious work so far into the ground that not only the Catholics but every self-respecting man got out. But here I never knew a man to keep away on account of the religious part. Two left because we were 'too worldly.' We have many earnest Christians, and we do our best work quietly and by personal touch."

Recently the Association has begun to establish industrial branches. It is able to do what the men would not do by themselves and the employers could not if they would. There are five industrial branches now actually running: one in the iron mills at Lorain, Ohio; one at Stamps, Ark., in a lumber mill; one at Atlanta, Ga., also in a lumber mill; one at Wilmerding, Pa., in the Westinghouse Electric Works, and one at Proctor, Vt., for the marble workers. Here 217 men joined the first week without solicitation; and a night-class contains forty Hungarians. Since January 1st the committee in charge of the industrial department has received applications either from the men or the employers in fourteen plants, some the largest in the country, representing eight industries. The Association secretary or agent goes directly to the men, and if he can get enough to agree to form a branch to insure its success from the point of view of numbers, he raises what money he can from the men before he calls on the company to subscribe. In this field lies perhaps the greatest opportunity of the Young Men's Christian Association, and it has begun vigorously to cultivate it.

Even from an examination of the Association in the one city of New York it is difficult to generalize. Its work varies greatly according to different conditions. Some secretaries are broad-minded, some narrow; some are men who would be hard put to it to win a livelihood in other callings, while others are efficient men who have given up more lucrative work to devote themselves to helping the less fortunate. It is distinctly an association for mutual helpfulness, and not a charitable institution. It is democratic in its management and in its underlying idea that the real way to help men is to give them opportunities to help themselves. "Pious" it has certainly ceased to be. It represents today the strongest, largest manifestation of enlightened practical, strenuous Christianity in the United States, and probably in the world.

THE MODEL AMERICAN RESIDENCE

THE EQUIPMENT OF THE MODEL HOUSE—CLEAN CELLARS, SANITARY KITCHENS AND WHOLESOME PANTRIES—AUTOMATIC ELEVATORS—A COMPLETE LAUNDRY AT HOME—NEW DEVICES FOR WINDOWS AND DOORS—A HOSPITAL ROOM AND SUN PARLOR

BY

KATHARINE C. BUDD

CUSTOM has made us familiar with the many devices invented to increase the comfort of our houses. We do not realize how fortunate we are until we compare our lot with that of our friends in England and France. We would not tolerate in the meanest houses here sanitary equipments in daily use in good quarters of Paris. Bathtubs, regarded there as a luxury, are here a necessity too common to be discussed. The French fashion of having a copper tub on wheels brought, through the streets, to one's bedroom when a hot bath is desired, would not appeal to our sense of comfort. The tub, lined with fair white sheets and laboriously filled with water, may seem inviting to a Frenchman; to us it seems a relic of feudal life.

In planning our houses all is carefully studied in order to reduce the amount of service required. Trained servants are difficult to find, and we are obliged to simplify their tasks and to adopt the latest labor-saving inventions.

In considering the appliances used in our homes, the best place to start is the cellar. The first thing we notice is the freshness of the air. Even though direct sunlight cannot penetrate here, the current of well-sunned air, constantly drawn through from openings in the front to the windows in the rear, keeps the air wholesome. The smoothly concreted floor, the shiny white walls and ceiling, reflect light into dim corners. Electric light is no friend to heaps of rubbish. A modern furnace is self-regulating, requiring little attention after the shaking-down and replenishing in the morning. The ideal system is one where hot water is carried in tubes throughout the house. With this system the temperature of the rooms may be kept at the same degree of heat in the spring and fall. For this reason, in spite of

the expense involved, hot-water heating is growing more popular.

Here in the cellar is the meter which measures the quantity of gas consumed. In some places there is also a water-meter to prevent wanton waste of water. And here are the drain-pipes and their connections, deemed ugly and uninteresting by the uninitiated. The weight of cast-iron pipes has increased because we learned that the rust and various gases in time rot the pipe, eating great holes in it. Much time has been spent in the perfection of traps and fresh-air inlets of different kinds.

One recent invention is coming into common use, especially in isolated country houses—acetylene gas. Within a very short time radical improvements have been made which render the manufacture of it perfectly safe. The carbide, in powder falling into water, cannot explode. The little machine in the cellar provides a gas five times as powerful as the ordinary illuminating gas. A special tip for the burners is necessary but otherwise the piping and other apparatus are the same as for the old-fashioned gas. The carbide, made in great quantities by the power of Niagara, is very cheap. It has within a few weeks been discovered that the waste carbide formerly thrown away would burn with an intense heat in the furnace mixed with clinkers.

THE MODERN KITCHEN

The modern kitchen is of moderate size. A large kitchen means added steps for wear and feet. The floor is covered with a patented composition of pale yellow, warmer than tiles, although equally non-absorbent and easy to clean. A six-inch border of white glazed tiles wainscots the walls. This wainscoting of tiles, six feet high, joins the glossy plaster above without a break, the ceiling

being finished with a curve. There are no projections, no angles not readily dusted out with a cloth. In fact, although the ease with which the room may be kept clean does not often warrant the operation, the hose may be turned on here without injuring anything.

The wrought-iron range has many labor-saving attachments. A wide iron hood projecting out from the wall catches all the odors and much of the heated air, drawing them up through a register into a ventilating flue in the chimney. A porcelain sink opposite, tables with marble tops built into the wall and supported in front on nickel-plated legs, cupboards with sliding glass doors built into the wall, a block of oak for meats, are among the fittings of this kitchen. Many ranges are made with "complete gas attachment," as the catalogues call it. This is very convenient in summer. It is arranged over the range proper and includes a bake oven, boiler and extended top. It can be used at the same time as the coal range if more capacity is needed. The broiler and all the ovens are ventilated. In all coal ranges some form of revolving grate is used which quickly disposes of clinkers and ashes. The old-time cook with her ineffective little poker would look at these with awe and amazement. Cooking by electricity will soon become common. We use electric plate-warmers and various small devices, but the main part of the cooking is carried on in the old-fashioned way. Electricity is still too expensive for everyday use in the range.

THE NEW STOREROOM

The storeroom, opening off the kitchen, is a model of convenience. Tiled and wainscoted like the kitchen, with non-absorbent shelves graduated in width according to the articles to be kept on them, with flour and sugar in patent metal bins which tip back or slide in or in other ways are cleverly contrived to fit the space allotted to them. There is a sunny window in the storeroom which insures perfect ventilation.

The daintily kept cold-room is a pleasant place to inspect.

The inner surfaces are of glazed white tiles. In receptacles within the double walls ice is put from the outside. In country houses where it is necessary to keep meat for several days this cold-room is large. It

is often built in as part of the regular ice-house. The regular supply of forty or fifty tons serves to keep this room cold all summer.

THE MODEL LAUNDRY

It would take a volume to describe the wonderful inventions used in the laundry. Some of them are expensive and not suitable for use in private houses. In the future the laundry will be as completely eliminated from our houses as it is in France, but at present the careless way in which our linen is handled in the great laundries makes us anxious to have it washed at home. The line of porcelain tubs, well supplied with hot and cold water and the convenient wringer, seem so much a matter of course that we forget the amount of lifting a woman was obliged to do in the days of portable tubs. At the side is a drying-room, with rows of movable racks, easily pulled out and filled with clothes and then rolled back into the hot, dry air of the steam-chamber.

A very simple form of steam washer, which cleans the clothes perfectly without rubbing, is used in the boiler. This is sometimes an elaborate affair in larger laundries, but the principle is the same—a current of steam and hot water constantly passing through the meshes, removing all stains.

An electric iron, a heavy affair connected by a covered wire with the nearest electric fixture, is used for ironing fine pieces. A mangle for straight coarse goods takes the folded sheets or towels rapidly between heated rollers.

HOW THE PANTRY IS PLANNED

The fittings in a modern pantry are arranged to avoid waste of space and to afford the utmost convenience. Shelves are as carefully studied as are the mahogany bookcases in the library. The height of the sink, the lighting of the room, the placing of refrigerator, plate-warmer and all such details are considered. The result is so simple that the owner takes it all as a matter of course, or perhaps regards it as a happy accident. There are two pantries when, as is usually the case, the kitchen is in the basement. The one next the dining-room is connected by a noiseless dumb-waiter so accurately balanced that a touch will set it in motion.

The upper part of the walls is covered

with dressers enclosed with sliding glass doors. The shelves are cleverly planned to contain without waste space all the china and glass necessary for the tables. These shelves are sometimes made of heavy plate glass. Under the dressers runs a wide counter-shelf. On one side of the room are two pantry sinks, with open plumbing. A rack under one of the dressers holds the trays. Places are provided for fresh linen, cloths for cleaning, cups and bottles of all kinds. Under the counter-shelf opposite the sinks is a small refrigerator lined with tiles. This is large enough for desserts, etc. A plate-warmer, heated by gas or electricity, is set in the wall near the dumb-waiter.

This enumeration of the fittings of the pantry does not convey an idea of its attractive appearance; its white-tiled walls, the leaded sash in the window, the glossy, immaculate floor, the nickel-plated trimmings of the refrigerator, the hot-closet, the hardware and supports for the shelves must be seen to be appreciated. The door connecting with the dining-room swings on spring hinges which permit it to open into either room, closing immediately after.

From the first floor a "lift" is provided for the use of persons unable or unwilling to climb the stairs. This is run by electric power. By a push button on a dial inside the car is started when both doors are closed. The elevator stops automatically when it reaches the desired floor. The doors cannot be opened until that floor is reached, thus preventing possible accidents. An attendant is not needed for this elevator. It can be opened only when opposite a floor. It will not start until both doors are locked. Very often a smaller lift is provided for freight, such as coal or linen. This, also, is automatic.

LUXURIOUS BATHROOMS

The ordinary bathroom of a private house is finished in a style that twenty years ago would have been considered luxurious. The floor is covered with small unglazed white tiles or inch-square marble blocks with a pretty border. The walls, wainscoted with large white tiles, have a coved tiling where the floors join. No dust can accumulate anywhere. All plumbing is open. The large tub is of porcelain or perhaps of iron enameled white, with lines of gold outside. It has

been found that many people have been injured by stepping on the soapy tub and striking the faucets. Therefore the handles are outside the tub.

SPECIAL ROOMS FOR COMFORT AND HEALTH

In many houses, especially where there are children, a hospital-room is fitted up on the top floor, isolated from the rest of the house. The walls are painted in a cheerful color; the floor is covered with some patent preparation like lignolette or asbestolette. An open fireplace assists in the ventilation. A tiny but complete arrangement for cooking the invalid's food is connected with the chimney which carries off all odors. It is here that the electric equipment for cooking and sterilizing food finds its true value.

On the roof we sometimes find a sun-parlor of heavy plate glass. This is heated as easily as is the rest of the house. A row of boxes at the sides is filled with plants, turning it into a miniature conservatory. Here the children spend much of their time in winter. The best way to arrange this is on the roof of the extension in the yard if there is no elevator in the house, for in America we are beginning to object to an undue number of stairs to climb.

For increasing the light at the end of long rooms there is a number of inventions. The commonest diverts the light through prisms of molded glass until the rays enter the room horizontally. Window cleaning also, has been simplified. Windows may be arranged to swing on a pivot into a room as well as up and down.

The attitude of the educated, cultivated woman toward manual labor is changing rapidly. At one time she regarded the time spent in her kitchen or sewing-room as lost. Now it is this very woman who is most capable of instructing and governing her servants. She fully appreciates the value of machinery and the various "Yankee methods" devised to aid her in simplifying the work in her household. She seizes the latest idea. When the comfort and health of those dearest to her are concerned her patience is endless. In building the new home, it is generally the mistress who investigates and suggests, and realizes from experience the important bearing these details have on the future welfare. If the house is a success, it is largely due to her influence.



THE RAILROADS AND FORESTRY

THE GOVERNMENT GRANTS TO RAILROADS—THE CARELESSNESS THAT WASTES TIMBERLANDS BY FOREST FIRES—SCIENTIFIC FORESTRY AS A HELP TO FURNISH THE GREATEST AMOUNT OF RAW MATERIAL, TO MINIMIZE WASTE AND TO BEAUTIFY THE RAILROAD LINES

BY

JOHN GIFFORD

ASSISTANT PROFESSOR OF FORESTRY IN CORNELL UNIVERSITY

MANY people have thought that the wide use of steel, stone and coal would reduce the demand for wood. But they forgot, among other things, that railroads are being built, mile upon mile daily, the world over.

Many said that wood would become very scarce and expensive and steel and stone would entirely take its place. Wood is strong in proportion to its weight; it is easy to work, and easy to hold in place by nails and glue; it is a non-conductor of heat and electricity, and possesses beauty of grain, color and other qualities which fit it for a greater variety of uses than metal. It can be grown over a vast territory of land. Metals are local and exhaustible; wood is almost everywhere, and a forest, if properly tended, is a living, perpetual resource.

We have in this country at least 250,000 miles of trackage, excluding electric railroads. About 2,500 ties are used per mile. The average life of a tie, without the use of preservatives, is about six or seven years.

There is, then, a constant annual demand for more than 100,000,000 ties. A tree which will yield three good ties, under forest conditions, in this climate, is at least fifty years old, and it is an exceptional acre which produces more than three hundred such trees. An acre of tended forest ought, therefore, to yield about eighteen or twenty ties each year. The annual demand for each mile is about 400 ties. Twenty-five acres of forest are necessary, therefore, for every mile of track. A railroad with a trackage of 5,000 miles would need about 125,000 acres of tended forest to supply itself perpetually with ties. For a large corporation this is a slight task. It spends \$1,000,000 frequently for a single bridge. The intermediate yield from thinnings would supply fence-posts, which are also used in large quantities. It is of interest to note that the United States Government donated to the Union Pacific 1,655,586.3 acres and to the Northern Pacific 1,518,007.91 acres during the year which ended June 30, 1902.



WHERE A SERIES OF FIRES HAVE MADE A DESOLATE WASTE.

Scenery along many western railroads

The pinch of want has never been seriously felt by railroads. Many pass through regions rich in virgin timber. The Federal Government not only presented them with land grants of immense areas of timber, but gave them as well *carte blanche* to all timber needed for "constructive" purposes on Government land "adjacent" to their lines. Few railroads would consider it urgent to care for forests while they can help themselves on United States public domain.

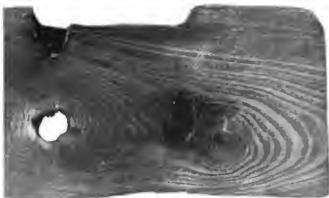
It is dangerous to be lavish with natural resources. It would be wise to care for every acre of public non-agricultural forest land in our West, and to require corporations of all kinds to pay for wood, just as other people do in other parts of the world. The public domain belongs to the people and not to a few western settlers and corporations. The old system was wise in the beginning, but it cannot, with fairness to all, continue forever. The amount of good land which has

been granted to railroads during the last ten years approximates 100,000,000 acres. This is a territory three times the size of the State of New York and almost ten times the size of the Swiss Republic. During the year, ending June 30, 1902, 4,848,845.7 acres were granted to railroads. This is an area almost as large as the State of New Jersey. The general governmental policy is turning the proper direction in reserving more than 60,000,000 acres of forest land. A national forestry policy is forming. The next step in line should come from the railroad. Railroad forestry, which is just beginning, is something new and truly American.

Few persons would recommend the placing of rights-of-way for timber production because the lines are too narrow and are generally not suitable. Trees which have been planted along rights-of-way, in plains and prairies, have never prospered. They are of little use for timber, although



WHITE OAK RAILROAD CROSS-TIE DECAYED BY A FUNGUS



CROSS-SECTION OF A CATALPA TIE

they have helped in checking winds and snow. The widest right-of-way is seldom more than 200 feet on each side, and usually it is much less. Timber cannot be successfully produced in long, thin strips. Every railroad should own and properly care for large blocks of forest land for timber production. Timber culture by railroads is just as practicable as mining coal or manufacturing iron.

Railroads, as a matter of fact, can produce

timber to better advantage than any other proprietors. They are long-lived, they must have timber, and they can transport it at a minimum cost. The ties, poles, fuel-wood and posts which they consume in immense quantities do not need large manufacturing establishments to make them ready for use, as do coal and iron. They can be prepared in the woods, ready for use, with an ax. Well-established roads are willing to sacrifice high gains to reduce the



THE FIRST FIRE KILLS THE GREEN TIMBER, LEAVING THE GROUND COVERED WITH HIGHLY COMBUSTIBLE MATERIAL



HARVESTING EUCALYPTUS IN SOUTHERN CALIFORNIA

future cost of maintenance. It is a plain business proposition.



A RAILROAD IN EUROPE, SHOWING WATTLEWORK ON THE EMBANKMENT

The only extensive single block of timber planted by a railroad in this country is near the village of Farlington, England. Its 400 acres, planted between 1877



A EUROPEAN HILLSIDE WHERE LANDSLIDES ARE PREVENTED BY BOTH MASONRY AND PINE GROUNDS

1884, by the Kansas City, Fort Scott & Memphis Railroad Company for purely commercial purposes, consist of hardy catalpa, for posts, poles and ties. This forest has been carefully studied by the Bureau of Forestry, with the following results:

Planting and tending has cost \$124.51 per acre; the gross value is at present \$390.21 per acre; allowing six per cent. compound interest there is still left a clear profit of \$138.19 per acre.

In this way a railroad can prepare for the



CATALPA PLANTATION BELONGING TO THE KANSAS CITY, FORT SCOTT & MEMPHIS RAILROAD COMPANY AT FARLINGTON, KANSAS

future, during prosperous times, by converting the forests along its lines into a perpetual resource. Beginning with fairly well-stocked timberland, such as exists in many parts of this country, a corporation could secure at once good interest on the amount invested. And it could cut its crop in such a way that the forest would actually improve in quality.

There are many incongruities in this country. The "big trees" of California are cut for grapevine props; shingles from the Pacific coast may be bought in eastern markets at reasonable prices; corn is burnt in Kansas when grain is cheap and fuel dear; while a third of the State of New Jersey and a part of Long Island, within thirty miles



A FOREST IN FRANCE WHICH HAS YIELDED GOOD TIMBER AND A HIGH RATE OF INTEREST FOR CENTURIES AND HAS CONSTANTLY IMPROVED IN QUALITY



A YELLOW PINE FOREST SHOWING A GROUND FIRE IN THE DISTANCE

the largest population centre of the United States, both by rail and water, is periodically burnt over by wasteful forest fires. In these days of dear coal we should not lose sight of

the fact that hundreds of thousands of cords of wood are wastefully consumed by forest fires, and that fifty per cent. of these conflagrations are set by locomotives.



HARVESTING TIMBER IN A SOUTHERN PINERY

Miles of blackened wastes border the railroad lines. In building a big railroad all efforts and funds are concentrated on getting it through, putting it into running order and up to standard. By that time the fires have done their fatal work. Damages are sometimes paid, but they are never adequate. In time, public opinion develops and legislation follows. In Europe, where both the railroads and

forest culture are old, and where the state owns both railroad and forest, the railroad officials and foresters are forced to cooperate in preventing fire, and they are usually successful. Lanes along the track are kept clear of litter, the edges are plowed, and swamps and ditches are dug to mineral springs. Sometimes a row of evergreen trees is planted close to the track to serve as a screen to arrest the sparks. Often the lane is sown with cer-



THE LIVE-OAK OF THE SOUTH
One of our best tie timbers

della, a Spanish vetch which keeps green even in times of drought. With well-kept fire lanes, spark arresters on locomotives, care in dropping hot ashes, and constant vigilance on the part of employees during times of danger, locomotive fires can be prevented. Owners of woodland along railroads should cooperate by not allowing slash to accumulate close to the line, and by encouraging the growth, close to the railroad, of locust and other trees that are not easily burnt.

The planting of trees along railroads is, however, objectionable for several reasons. They obscure the track, crossings and signals, they blow over on the track and on the wires, and, if close to the windows, cause a constant and annoying whir. If trees are necessary as a protection against wind and snow, they should be planted in wide belts of evergreens some distance from the track.

A dense growth of low but deep-rooted coppice on embankments would be excellent to prevent landslips and washouts. The locust is used for this purpose in Europe. Engineers in this country, however, are apt to work with stone and other constructive material rather than with shrubs and trees.

A meeting of railroad men was held at Cumberland, Maryland, on November 22

and 23, 1901. Two hundred of the leading officials of the Baltimore & Ohio Railroad listened attentively for two days to lectures on forestry, and the Bureau of Forestry has since been requested to prepare working plans for one hundred and fifty thousand acres belonging to this company in West Virginia. This is unquestionably merely the beginning of a general movement. The railroad will profit in the transportation of materials and in the general betterment of country which would otherwise remain waste. Were Germany recklessly to cut her forests, a large proportion of her people would be paupers, and it would ruin many small industries dependent upon a constant supply of raw material. By depleting our forests we are driving a large number of our people indoors to the factories of the cities. It seems unjust to the taxpayers of town and farm for a corporation or an individual to cut in a few days a forest which has been centuries growing, and then to leave it, a desolate waste, to the State. The productivity of the land is the thing to consider, and we are constantly consuming more of essentials. The proper policy is to spend the interest and conserve the principle. This is the aim of scientific forestry.

CONFESSIONS OF A FOREIGN NEWS-PAPER CORRESPONDENT

SIDE-LIGHTS ON GERMAN POLITICAL AND SOCIAL METHODS

BY

WOLF VON SCHIERBRAND

AUTHOR OF "GERMANY: THE WELDING OF A WORLD-POWER," AND FORMERLY CORRESPONDENT OF THE ASSOCIATED PRESS AT BERLIN

CONDITIONS under which a newspaper correspondent has to live in continental Europe vary radically from those either in England or in America. The difference is the more startling to a correspondent trained according to American newspaper methods.

Take, for example, the habit of quoting names. The American newspaper thinks it essential to make clear the source of important statements. An interview with a nameless statesman whose identity cannot even

be guessed from the context is put down in American newspaper parlance as "a fake." But the opposite method is the method in the continental countries of Europe. There it is an unpardonable offense to name your informant.

This knowledge I purchased, at rather an inconvenient price, when I had been but three months in Berlin as correspondent of the American Associated Press. It was in the early autumn of 1894. Bismarck's successor in the unsafe chair of the imperial

chancellor, General Count Caprivi, had resigned early in the evening, after a stormy meeting with the Kaiser. At ten o'clock that night Caprivi accorded me an interview. He did not request that his name be withheld. In my ignorance I quoted him in my cablegram that night. His talk to me had been brief but to the point. He had told me of the causes that had led to his loss of favor with the Kaiser and to his retirement.

But I had unwittingly violated one of the first principles in the code of German journalistic ethics. And I reaped a whirlwind of abuse for it. "That news is bogus—must be bogus, you know," said the German newspapers and their correspondents, "for, don't you see, he has quoted Caprivi?"

For years the reputation thus earned made my work doubly hard. Whenever I happened into one of the departments a whisper ran round, "That's the man who names names!" I never quite got over this during my long stay in Berlin.

During the Samoan troubles, when Commodore Kautz had been shelling villages near Apia, and a detachment of German marines had been waylaid and slaughtered by Malietoa's men, I obtained a very interesting talk with the Secretary of Foreign Affairs. Its value, however, chiefly consisted in the fact that it came from this official's own lips. I asked him to let me quote him, but he refused point-blank. The matter then, being cabled as from an anonymous source, fell flat on this side the ocean. The very purpose my informant had had in view in talking to me naturally miscarried as well.

On another occasion, when I had succeeded in getting from the American Ambassador exclusive and accurate information about the tripartite agreement between England, Germany and the United States (the agreement being in the nature of a preliminary settlement of the whole Samoan trouble, and substantially as it was ratified at the capitals of these three powers), I had another illustration of the difference between continental and American newspaper methods.

The hour being then about noon in Berlin (i. e., 6 A. M. at New York), I had time to verify the news and to secure additional details. So I strolled into the Foreign Office. My first question had an unexpected effect. It changed the staid and solemn official in a jiffy. He grew pale.

"What!" he almost screamed, "you know that?" I bowed in affirmation.

"Why, I thought," he went on, breathlessly, "it was understood in Washington and London that the first information to the public about this settlement was to come from Berlin. I don't see how it can have leaked out. Who told you?"

I said I couldn't think of betraying my informant.

"Hm, hm"—in a quandary—"and who did you come here for?"

I told him my object.

The puzzled expression was intensified. Then he suddenly looked up. A ray of hope was glimmering in his fishy eye. "Please would you mind waiting here a minute while I inquire of the chief?" he asked, and left me standing there. He was back in a trice. "Well," he remarked, and his smile was triumphant, "you mustn't use that information today."

He must have noticed my astonishment. "No, you mustn't use it today. You see the three cabinets of Berlin, London and Washington agreed that the information was to come from Count Bülow first, and he will impart it tomorrow—probably in the Reichstag. It's too late to make arrangements for that today." The Reichstag usually meets at twelve, and was in session while he spoke.

"But what," I ventured to interrupt, "has all that got to do with me? My business is to furnish the news, as soon as I have it, to the American press."

The official stared at me in blank amazement. "But, don't you understand, sir," he replied, rather nettled. "Count Bülow doesn't wish premature publication of these facts."

"I am sorry, genuinely sorry," I began, "but—"

"You surely must appreciate the situation," the official insisted. "I need not point out to you that we shall not forget this favor. And what possible difference can it make to you whether you send this news today or like the remainder of the correspondents tomorrow?"

What difference, indeed! Well, the upshot was I left the Foreign Office, having, of course, made no pledge to hold this important piece of news in abeyance. Thirty minutes later the wires flashed it across the

water, and the afternoon papers in the United States published it that day in full. The news was not cabled back to Berlin in time to spoil Count Bülow's programme. That suave statesman promulgated the information next noon in the Reichstag as though it had reached him that very moment. He made an impressive scene of it.

During the Spanish-American war I became painfully aware of other difficulties that beset the path of an American correspondent on the Continent. My instructions at that time were: "Send the news, no matter how or whom it may hit!"

A large part of my work, from April to November of that year, was reporting the actual state of feelings prevalent throughout Germany in respect to that war. That the pen pictures I drew during that period were not likely to increase American affection for our German cousins is true. But that was not my fault. I did not exaggerate. The German people during that war were as intensely hostile to Americans as they were to the English cause during the Boer war. My plain duty was to describe things as I found them, and this I did. I did not omit mitigating circumstances. I seized upon and cabled every fragment of news calculated to exonerate official or unofficial Germany. But I sent all the facts I could get. In all this I simply obeyed instructions and felt free from bias. In fact, other American correspondents then in Germany found fault with me for my lack of "Americanism."

But my activity for the Associated Press was nevertheless looked upon as nefarious by the German Government, and I was made to suffer. I was approached, time and again, both at the Foreign Office and outside, with hints, veiled threats, or direct requests to color my reports so as to give the impression that there was no ill-feeling for America on the part of the German people. When I did not heed these requests, the Government began a regular campaign against me, assailing me and impugning my motives in that part of the German press subservient to its interests and in all the other sheets it could influence or control. I became a proscribed man for a time. Two of the chief Government organs, the *Norddeutsche Allgemeine Zeitung* and *Die Post*, went even the lengths of threatening me with expulsion.

This must be said in explanation: Inde-

pendence and freedom of the press being unknown in Germany, and every editor there having constantly the fear of the jail before him, both German Government and press were unable to see how I, representing a press governed by no such fear, could dare publish news unwelcome to them.

In the other countries of continental Europe the condition of the press is not much better, and in Russia much worse. In France, during the Dreyfus affair, a number of foreign correspondents were expelled. I recall similar cases in Rome and Vienna during times of heated public opinion.

As a result, writers on the Continent—editors, contributors, reporters—never speak out in bold and manly fashion. They dare not. Not everybody likes martyrdom, even for so good a cause as a free press. Under the stress of necessity they have originated and cultivated a style of diction which may fitly be called the "read-between-the-lines" style. They express their meaning by innuendo, rather than directly, avoiding in this way the many pitfalls which courts and press laws have dug for their undoing. The reading public are accustomed to this. They do read between the lines, and gather, as a rule, quite correctly the meaning which the cautious writer meant to convey. The American or English correspondent, unused to these ways, requires years to become an adept in them.

I recall the case of Mr. Valentine Chirol, a very able man who represented for a period the London *Times* in Berlin. After the incident which created such deep indignation in England, viz., the Kaiser's despatch to Krüger on the occasion of the Jameson raid, he was expelled for plain speaking. My own case, brought about by the same offense, is likewise an illustration. For I, too, more recently shared Mr. Chirol's fate and that of a number of correspondents in Berlin for having dared write the truth about one of the many extravagant acts the Kaiser was guilty of during my stay at his capital city. I was caught napping. I ought to have known better.

Another difficulty under which the American correspondent labors is the difficulty of securing news. No such methods would accomplish the purpose on the Continent as are used here. Personal influence and a wide acquaintance are, of course, indis-

pensable to every successful newspaper man anywhere on the globe. But in Germany and on the Continent generally it requires much more than that. To become a successful correspondent there *for any length of time* one must cultivate a number of other things. He must be in the social swim, and dine and wine his patrons as well as hobnob with them at their own firesides. He must show a certain amount of style, and must conform in his life to the demands of fashion. He must distribute "tips" liberally and regularly among the many underlings, who in turn supply him with "tips" of news. He must be a bright and amusing conversationalist, full of good humor and racy anecdotes. He must pretend to hold the same views politically and socially which his informants hold. He must be extremely discreet. He must write his news with great care, so that its source cannot be traced. He must—but I might go on with the list until the picture would be that of a Chesterfield and a Machiavelli rolled in one.

To speak more in detail. American visitors in Paris, Berlin or Vienna often wonder how and where correspondents do their work. The truth is, a large part of their work is done at these very social gatherings where you have met them. Important news is usually there obtainable only. Statesmen and diplomats, generals and admirals, leaders of thought and action, the foremost men of business and the indefatigable promoters of great new ventures—all the men and women, in fact, who make the news and who are the fountain-head of it, the correspondent will meet there. It depends on his individual exertions and on his tact and gifts of persuasion, what use he makes of his opportunities. Being treated as a social equal, it devolves, of course, on the correspondent to reciprocate favors shown—not in quantity, perhaps, but at least in quality. The leading correspondents must have homes of comfort and must throw them open to the official and unofficial world at stated intervals, say three or four times per season. Their private fortunes or their incomes must be large enough to admit that. Their annual expenditures cannot be less than \$5,000 and may exceed \$15,000. The *London Times*, for instance, pays its correspondents on a liberal scale, salaries of \$5,000 to \$10,000 being the rule. Yet the majority of them

find it necessary to make up regular deficiencies in their exchequer out of their own private funds. Money in the capitals on the Continent goes furthest in Paris and Rome, Berlin being next, and Vienna and St. Petersburg being the most expensive places.

The peripatetic American correspondent on the Continent, of course, is exempt from these conditions or from most of them. But he will not be able to obtain much news—I mean real, honest, reliable news. There is for instance, one such "Wandering Jew" of a correspondent on the Continent. He is forever flitting between extreme points of the compass—in Sofia today and in Copenhagen next week. The prestige of his paper helps him. A purse liberally supplied by his employer in New York helps him likewise. And indiscretions he may be guilty of today are forgotten within the two or three years it takes him to return to the same spot. But his news is, despite these advantages, unreliable as a rule. In every one of these continental countries it takes years of quiet, persistent study to fathom political, social and economic conditions, and without such intimate knowledge the correspondent will constantly commit egregious blunders.

The life of the American correspondent on the continent of Europe is a life interesting and fascinating enough in its way, and it broadens the mental horizon as, perhaps, no other occupation does. But it is a nerve-destroying life, a life in which there is scarcely a minute he can call his very own. Every day in the year it spurs its slave on to utmost exertion. It barely pays expenses, and it necessitates constant outlays in time and money which cannot be put down in the "expense account" and which are a drain on health and purse alike. Even under the most favorable circumstances the game is hardly worth the candle. To go to bed at two or three, fagged out with never-ending excitement and toil; to be waked out of sound sleep an hour later by a ring at the telephone or by inopportune cable inquiries from the home office; to dress hurriedly, take a cab to the nearest telegraph office, and there wire a hasty reply; then to return and seek a few more hours of fitful sleep, and rise, morning after morning, unrefreshed, with never repose for body and soul—all this is neither conducive to longevity nor to a quiet and contented mind.

JOHN FISKE AS A POPULAR HISTORIAN

HIS PLACE AMONG HISTORICAL WRITERS AND MEN OF LETTERS—
A REVIEW OF HIS WORK AND AN EXPLANATION OF HIS METHOD

BY

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IN an article published in *THE WORLD'S WORK* for July, 1902, upon "Some Living American Historians," an effort was made to point out the distinctive characteristics of the writing of history as at present held and practised by the chief exponents of the scientific historical school in the United States. The ideal of the writers of this school is the discovery and narration of the truth, their method is that of scientific investigation, and both ideal and method have begun to be followed on this side of the Atlantic Ocean. But such scientific histories cannot appeal directly to the great body of readers; their very impartiality repulses a generation that thinks history should be made as fascinating as romantic fiction; their accurate perspective includes many things that do not interest the general public; and the reaction from history which should be all style and no facts has induced some of the most illustrious representatives of the scientific school, especially in Germany, to go to the other extreme of compiling history which is all facts, set forth with studious disregard for the niceties of literary style. There has therefore come into existence a class of historical writers who aim to show forth after a fashion attractive to the general public the results of the labors of more serious and carefully trained historical students. The productions of these popular writers are as much controlled by regular laws as the work of the scientific historians themselves; they also have to understand the mental attitude of their readers; they have to proportion their narrative along different but as well-defined lines as their carefully trained contemporaries; and they have to realize that success can only come to those who rightly gage the receptivity of their particular public. The late John Fiske was the most brilliant and

successful of the popular writers of history in the United States in the last decade of the nineteenth century, and it is intended here to try to analyze those qualities as historian and man of letters which set him at the head of his class as a popular American historian.

Mr. W. S. Gilbert once said of the comic operas, "There are some men who seek to win the applause of the private boxes; there are others who cater to the taste of the gallery; but I always keep my eye fixed on the dress-circle." Just so the scientific historians cater to the private boxes and write for the appreciation of minds trained in scientific research and able to criticize its results, while the vulgar historian who seeks the applause of the gallery rouses their fervid enthusiasm by wild generalizations and clap-trap patriotism. Mr. John Fiske, like Mr. Gilbert, won his triumph by skilfully pleasing the taste of the educated classes of the dress-circle. The difficulty of his task is attested by the rarity of its accomplishment. A scientific historian can be trained in scientific method, and the vulgar historian needs only to share the ignorance and the gullibility of his readers; but the writer for the dress-circle must be born with an instinctive feeling for the width and the limitations of the education, the experience and the sentiment of his audience. It is true that it is the scientific historian who adds to the knowledge of the human race and clears away the old legends and traditions which make the men and women of past ages a set of impossible monsters; he it is who by the ardent pursuit of truth makes the dark places of history clear, and shows how things really happened and how institutions took root and grew; and it is his accuracy of perspective and sense of proportion that enable us to grasp the meaning of the lessons of the past. But the

very form, depth and nature of his work make it necessary that it should be transmitted into more readable shape for the instruction of the majority.

It is impossible not to recognize that there must be more than accident in the fact that John Fiske was not only the most successful popular historian, but also the most successful platform lecturer on history of his generation. The same qualities that commended his books commended his lectures. Practically all his historical works were based upon lectures delivered to cultivated and educated general audiences from Maine to California. In the preface to his "The Beginnings of New England" he mentions no less than twenty-three places in which lectures had been delivered by him, containing the substance of that book, between May, 1887, and its publication in April, 1889. This practice of trying his books from the lecture platform in all parts of the country gave Mr. Fiske an admirable means for testing their effectiveness. Though popular in form, his lectures, like his books, were not designed for the uneducated; and the crowds which attended them consisted of cultivated people of all classes and professions, and not simply of young students. It would be vain to speculate whether Mr. Fiske learned his power of writing popular history from delivering popular lectures, or whether it was the temperament in the man that made him acceptable to a broad general audience both as a lecturer and as a writer. His unrivaled gift for hitting the popular taste was certainly heightened by the steady intermingling of lecturing and writing. He learned on the lecture platform what interested his hearers and faithfully followed their indications when he sent his books to press. In his case the lecture platform was more than an advertisement; it was a rehearsal. His greatest merits—simplicity of style, charm of manner and delicate interpretation of the past by use of modern phrases and modern instances—were seen to equal advantage in lectures and in books. His chief defects—a certain carelessness about details, a lack of true perspective and a readiness to digress from the subject in hand and to give vent to his own personal views on ethics or politics—were faults encouraged by these platform rehearsals. But it was to them that he owed his exact perception of his readers' demands

and learned how to satisfy them. Incidentally, the familiar acquaintance made with the personality of the man upon the platform gave to thousands of readers of his books an opportunity to read between the lines and to interpret the written pages by the voice and gesture of the living man. It has only to be remembered that John Fiske was a famous popular lecturer on history, that he was neither a hard-worked college professor on the one hand nor a political stump-speaker on the other, to understand why his books are more widely read than those of any other historian of this generation by the educated and cultivated section of the American people.

One of the first things that strike a critic in comparing the works of a popular historian with those of a scientific historian is the difference of historical perspective—perhaps it would be better to say, of proportion. The scientific historian endeavors with all his might to give such a careful balance to his treatment that the reader should grasp the true relations of the points of the narrative to each other. The popular historian, on the other hand, who thoroughly knows the intellectual make-up of his audience, adopts proportions suited to their attitude of mind. An admirable instance of this can be found in the proportions of Mr. Fiske's last volume, "New France and New England." In that volume he devotes sixty-four pages out of a total of 359 to the episode of the trials for witchcraft at Salem. When it is considered that he gives only thirty-four pages to the campaign of Louisburg, Fort Duquesne and the fall of Quebec, and only sixty-four pages, including these, to the whole of the important events of the Seven Years' War on the North American continent, the startling difference between scientific and popular proportion in weighing historic events can be clearly seen. That Mr. Fiske was absolutely right in gaging the interest of his readers there can be no doubt. The weird genius of Nathaniel Hawthorne broadcast a glamour over the witch persecution at Salem that fascinates a majority of American readers, while the military details of the great movement which ended the power of France in North America and paved the way for the American Revolution would be utterly distasteful to them. This instance, it is true, is taken from Mr. Fiske's latest book

which had not the advantage of the author's revision before his lamented death, but similar instances of the great difference between the proportions given by scientific and popular historians to different historical events, owing to the contrast between the points of view of the readers they were writing for, could be multiplied out of Mr. Fiske's earlier volumes. But what would be a gross instance of malproportion in a scientific writer, writing for a special and an almost professional audience, is no offense at all in a book intended for a popular audience.

The second great difference to be perceived between scientific and popular history is with regard to the treatment of detail. The scientific historian has not only to master details accurately, since the slightest flaw would spoil the whole picture, but has also to illustrate every generalization that he makes with a sufficient wealth of detail to illustrate his general conclusion. The popular historian, on the other hand, must be wary of wearying his audience by too many details; those which he introduces must be amusing or interesting in themselves, and he must not run the risk of over-illustration. Few historical writers have recognized this secret of widespread popularity better than Mr. Fiske. A happy instinct, either derived from experience on the platform or accounting for his success upon the platform, guided him in his selection of detail. If he mentions a proper name, it has generally some interest either explained or known to be understood, which at once appeals to the hearer or reader. Picturesqueness rather than special fitness controls the choice of detail of the popular writer of history.

Compare, for instance, the mass of detail and the citations of actual texts and sources in such a writer as Fustel de Coulanges with the airy grace of J. R. Green or John Fiske in dealing with an institutional topic. The popular historian makes his generalizations boldly in the knowledge that his readers are ready to accept his conclusions upon his word, while the scientific historian has to prove his generalizations up to the hilt with accurate citations and careful illustrations. Consider the mass of foot-notes that disfigures the pages of the great scientific historians, where these foot-notes often occupy a larger share of the space on each page than the text itself, as contrasted

with the absence of tiresome foot-notes in the popular histories. Count the number of proper names in a page of Gibbon and a page of Green; compare the description of a debate or a negotiation in a chapter of Henry Adams and a chapter of Fiske, and the characteristic differences in this respect between the scientific historian and the popular will at once become manifest.

Another characteristic of the popular historian may be summed up as his modernity. A general audience listening to a lecture, or a general reader reading a volume for amusement rather than instruction, loves to have his understanding quickened by allusions to contemporary ideas and events well within his knowledge.

The scientific writer, realizing the false impressions generally given by comparisons between past and present, avoids misleading serious students by tempting analogies. But the popular writer revels in allusions which, if not precisely accurate, are yet stimulating to the imagination. Mr. Fiske was a past master in the art of modern allusion. When dealing with the history of the beginnings of the American Revolution he found it expedient to write a page of praise for Mr. Gladstone's policy with regard to the Boer War of 1881, thus creating a misleading analogy that has been popular in these latter days. This sort of thing is common to all popular writers of history, who occasionally abuse their position as recorders of the history of the past to advocate their own political and economic and literary ideas with regard to the present. Mr. Fiske was a convinced free-trader, and dozens of allusions can be found, sometimes in the most unlikely places, in all his books, in which he takes a fling at the policy of protection. Wherever a pretext can be found he was ready to appeal to the past for the condemnation of this particular present policy that offended his political and economic ideas. He was equally ready to vent his literary likes and dislikes. A sincere lover of the novels of Charles Dickens, he took every opportunity to bring in citations from his books, and sometimes with a most curious effect, as where he described Augustine Herman of the Bohemia Manor as suffering from "matrimonial infelicities like those of Socrates and the elder Mr. Weller," or where in a note on the Mexican drink, *pulque*,

a reference is made to the plant which stood by the front doorsteps of George Nupkins, magistrate in Ipswich, England, who figures conspicuously in an episode in the "Pickwick Papers." This wealth of modern allusion, political, economic and literary, is characteristic of all successful popular historians. Understanding thoroughly the feelings and the favorite books of their readers, they know exactly how to place an allusion; and when the writer knows exactly, as Fiske did, the mental make-up of his chosen audience, he brings in references that startle the serious student by their ludicrous inappropriateness, but which keep the readers aimed at in perfect good temper from a knowledge of their particular limits and their precise point of view. One of the things that prevents a scientific historian from appealing to the majority of readers is the sense of remoteness, produced either by the entire absence of any evidence of being upon the same plane as themselves, or by such a perpetual reminder of things unfamiliar that it produces a sense of shamed ignorance. The more modern the allusions, the more certainly can the writer of history get in touch with a whole generation of readers; but time has its revenges, and some of the most popular histories written in the past are now mainly of value in that they show by their allusions the state of mind and plane of knowledge of an average general reader at the time when they were written.

Another quality always to be looked for in a popular historian may be designated the power of being up to date. In this characteristic, Mr. Fiske was easily first among modern American historians. In every one of his historical books he showed himself in touch with the most recent literature and expounded the most recent views. His philosophy, as he showed in his philosophical writings, was of the most recent type. As the exponent of evolutionary ideas he did something of the same sort in philosophy as he did in history. Both Darwin and Herbert Spencer acknowledged that John Fiske was the most effective and popular exponent of the great series of ideas which are lumped together as the philosophy of evolution. Equally effective was he as the exponent of the latest views of historical criticism. Take, for instance, one of the most skilful chapters he ever wrote, the first chapter of his "Discovery of America." In this chapter he summed up the views of

Mr. Lewis Morgan in the most fascinating style and made accessible to a vast body of readers views that would otherwise have remained perhaps for generations theories of primitive life to be fought over by specialists but never brought within the ken of general readers. Fiske's extraordinary knack of knowing what to leave out was never better illustrated than in this chapter. Great thinkers and discoverers have to prove their points, and are therefore confusing and repellant to untrained minds by excess of detail and the necessity of controversy; but the popular exponent has the art to assume the truth of the theory expounded and can handle the subject with an interesting simplicity. Even where the popular historian feels it necessary to take up a position upon some controversy he can put forth his view without the wealth of detail needed to convince well-armed critics. An instance of this can be found in Fiske's defense of John Smith in the third chapter of his "Old Virginia and Her Neighbors." The story of Pocahontas and her rescue of John Smith is one that American readers would be loath to discredit. Fortunately there are some good arguments in its favor, and John Fiske, with his accustomed skill, takes the reader into his confidence without excess of technical detail, and while doing his duty as a faithful historian in stating existing doubts of the truth of that romantic tale, yet leaves a pleasant and convincing impression of its perfect correctness. As might be expected, he defends the popular view of the character of Christopher Columbus, and throughout his writings is kind to all popular heroes. He is sufficiently touched with the modern spirit of impartiality not to fall into the snare of the Carlyle theory and practice of hero-worship. His heroes are as thoroughly human as modern critics could desire; he admits that Columbus was not married to Donna Beatriz Enriquez de Arana, and that his son Ferdinand was illegitimate; he admits that General Grant in his memoirs is not fair to the splendid conduct of General Thomas in the matter of the battle of Nashville; and his portrait of George Washington is that of a noble gentleman and not of a prig. The same sweet reasonableness, with a full acknowledgment of the value of modern research, is shown in his attitude toward other problems than those of individual character, and a good

specimen of his kindly treatment of controversies is to be seen in his accounts of the voyages of the Northmen to Markland and to Vinland. Throughout his writings proof is given of his desire to give to his readers the very latest and most scientific views, and he combines a readiness to expound these views with a full command of the bibliography of his subject to the most recently published pamphlet. It may be said, then, that Mr. Fiske, like other historians who have known how to reach the heart of the great educated public, was thoroughly up to date, both in his knowledge and in his allusions, and gave forth with the extraordinary skill due to his sympathy with his audience the very latest results of modern scientific historical research.

The point is worth discussing here as to whether it is possible for the same man to be at one and the same time both a scientific and a popular historian. Do the qualities that make the former exclude the qualities that make the latter? Can a writer be a master of the scholarship and of the critical training needed for scientific research without losing the broad sympathies that must underlie an appeal to the larger public? Must a sense of what the educated public demands blind a writer to the necessity of scientific precision? The question cannot be answered positively, but the study of the whole historical work of John Fiske is exceedingly suggestive. Like the late Professor Edward A. Freeman, whom he much admired and to whom he dedicated his "Discovery of America," John Fiske was not what the French term an *erudit*. He was not learned in the lore of manuscripts; he did not care for the niceties of textual criticism; he had no love for details or training in the comparison of material. But at the same time he had a wide knowledge of historical literature and, like Mr. Freeman, was fond of striking generalizations. Some of these generalizations were his own and some were borrowed from others, but in all of them he was guided by the instinct of the popular rather than of the scientific spirit. His most striking contribution to historical literature was his "Critical Period of American History." In this his first volume of history he gave no proof of original research, but his keen perception of the circumstances which threatened American unity between 1783 and 1789 made his treatment of that period almost an event in Amer-

ican historiography. Others before him had seen the importance of the Federal Convention and had realized that a new period was opened in the history of government by the drawing up of the American Constitution, but the exclusive devotion of generations to the history of the more romantic events of the Revolution had obscured their appreciation of the period of danger that followed. It was John Fiske's merit to have realized what was really the critical period in American history and thereby to have changed the perspective of all thinking upon American history since the time of the publication of his book. His "Critical Period of American History" owes its importance to his real gift of historical insight and compares favorably in this respect with his "The American Revolution," which is as conventional in treatment as the former book was unconventional. Like his friend Freeman, he could see clearly and generalize forcibly, but the subjects he chose for his later historical works did not give him the opportunity to make as striking contributions to the general perspective of history as he did in his first volume. In his later books he frankly used the work and adopted the generalizations of other men, and it must be remembered that in so doing he always gave the most generous appreciation to the scholars whose labors he placed under contribution. His lavish acknowledgments of indebtedness to others, often accompanied with the most gracious words of personal obligation, are evidences of the best type of literary honesty. The praise given to his predecessors is ungrudging; and even where he differed from their conclusions he had always a pleasant word to say of some quality they had shown or of some discovery they had made. There have been popular historians who have made their reputations by battenning on the labors of other men; the very quality of their work places them under obligations to their fore-runners; it is in their power to ignore those obligations; but John Fiske stands forth from among the crowd of popular historians as one who never stole but rather augmented the glory of others. His definite contribution to history was in the new perspective he gave to a certain phase of American history, and for the rest he gave to the world of his numerous readers a summary of the sanest work of other men.

It is hardly necessary to add any testimony to the charm of John Fiske's literary style, for without it he never could have been a popular historian. He added to perfect lucidity of statement the art of graceful narrative. His language is always simple and direct; his sentences are never involved; he never sacrificed to the temptation of elaborate antithesis, and he kept the intelligence of his readers clearly before his mind. Mention has already been made of his skilful avoidance of detail, and he rarely broke the law of good historical writing which forbids the accumulation of lists of proper names that have no meaning without proper introduction or connotation. If he seldom rose to eloquence, he never descended into mere verbosity, and he rarely failed to remember that his first task was to interest his readers.

No one ever succeeded better than John Fiske in attaining the aim of a popular historian. His instinct for what would interest his great public was unailing, and his perfect knowledge of his constituency was the secret of his success. A scientific historian can be trained, but the popular historian is born and not made. What in the scientific historian would be mistakes in proportion arise from the keen perception in the popular writer of the nature of the interest of his readers; what might be criticized in others as slipshod or daring generalizations are stimulating to the reason and the imagination of general readers; allusions that seem inappropriate and sometimes ludicrous to the serious mind are exactly suited to a larger class of the greater public; and the note of personality which irritates the highly trained specialist is delightful to the wider audience. Popular writers of history of the type of Mr. Fiske are much more rare than scientific historians, for they need a special power of arousing interest in a general audience that is not found more than once or twice in a generation. This power can be recognized, but it cannot be analyzed; it can be felt, but it cannot be taught. And the reason of this is, that the popular writer, in order to be a popular writer, must be, like the popular lecturer, a man of broad human sympathies, interested in the things that interest the majority of the cultured class to which he speaks, and able to set forth the things that arouse his interest in the way to arouse theirs. Such men are far more rare than scholars or

than critics. Such a man was the late John Fiske. He knew his public thoroughly and they responded generously. He brought out what was best in them by giving to them the best that was in himself. The things in modern American life that appeal to the best educated men and women appealed to him. The literature and the art and the music that they love he loved also, and with a more perfect understanding. The political ideals that they cherish he cherished, and he could show them why he and they alike cared for these things. Their chosen moral elevation was his also; their national heroes were to him models to be imitated and beings to be loved; and the emotions that they felt in the domains both of thought and of feeling he abundantly fostered and enjoyed. It was because he saw and felt like one of themselves, and was possessed further of the power of explaining to them why they saw and felt thus, that John Fiske became to thousands of his countrymen the interpreter of their own thoughts and feelings in the spheres both of history and of philosophy. A personal affection follows the great subjective, popular historian that cannot be felt for the colder and more impartial searcher after scientific truth; for the man who gives himself to the public in his lectures and his writings wins back from them a confidence that can spring from sympathy alone. To those who knew John Fiske personally his death brought a sense of crushing personal loss; to those who had heard him speak and had read his books the sense of personal loss was but little less; and any attempt made to analyze the sources of success of a popular historian, using John Fiske's historical work as a text, must end with the recognition of the truth that there are two codes of law for historical writers, the one defining the methods of search after and statement of truth so as to promote the progress of mankind and to widen the field of knowledge; and the other, which John Fiske so splendidly illustrated, having as its leading feature a broad human sympathy with the art of so freely and winningly revealing that sympathy as to hold the interest and stimulate the imagination of that large portion of educated humanity which forms the "dress-circle" of the cultivated public as much in the general world of art and letters as in the smaller mimic world of stage and theatre.



ANOTHER LARGEST SHIP AFLOAT

IT'S not the record-breaker any more," said a prominent steamship man the other day. "The dividend-payer is the thing."

The immense *Cedric*, which made its maiden trip a few weeks ago, is a "dividend-payer." This new steamship is the result of growing international trade and travel, the demand for the biggest, safest and easiest ocean carrying possible. It combines in large measure the convenience and luxury of the faster boats with the cargo facilities of the freight carriers. There are many people who prefer a steady seven-day boat to one of the lighter, speedier ships. This has been proved already with the *Oceanic* and the *Celtic*. The *Cedric* is the largest, and therefore probably the steadiest, ship afloat, with good speed, with splendid accommodations for 2,600 passengers, with comparatively cheap rates, and the cargo capacity of a warehouse. The *Cedric* carries a crew of 335 men, 350 first-class passengers, 250 second-class, and 2,000 people in the steerage; her capacity is 18,400 tons cargo, and she is fast enough to carry all mails.

Externally the *Cedric's* measurements are identical with those of the *Celtic*, but inside the gross tonnage is larger, reaching 21,000 tons. The *Campania* has a gross tonnage of 12,950 tons, the *Kaiser Wilhelm* 14,349 tons, the *Oceanic* 17,274 tons, the *Deutschland* 16,502. The *Cedric* displaces 38,200 tons, the *Celtic* 36,700. The propelling machinery of the *Cedric*, two sets of quadruple expansion engines with twin screws, will send her along at a rate of seventeen knots an hour. She has eight double-ended boilers, and, notwithstanding her size, she will not use as much coal as any of the fast boats. She has nine decks, four masts and two funnels, the last twelve feet in diameter and reaching 131 feet high above her keel. The *Cedric* is probably the strongest vessel ever built. Some of her plates weigh three tons apiece, and the frames are the heaviest ever fitted on a steamship.

No care has been spared to make this big ship luxuriously comfortable. Among the novelties of her passenger accommodations are single-berth staterooms. The first-cabin dining-room, on the upper deck, extends over the entire width of the vessel, seventy-five feet, and will seat 340 passengers. All the apartments are roomy and the decoration and general equipment are exceedingly handsome. Externally, her graceful lines conceal her size.

The *Cedric* is not an experiment. These large ships are as natural a development as the record-breaking passenger ships were. Shrewd steamship men feel, however, that, for the present, at least, the limit of size has been reached. The *Cedric* and the twin ships now building for the Great Northern Company will probably not be surpassed soon in tonnage.

HARNESSING THE HUDSON

AT Spier Falls, on the Hudson River, the greatest dam ever built for power production is advancing rapidly toward completion. It is of granite, 1,800 feet long. The cross-section at the base measures 115 feet and its greatest height is 156 feet. It is built in three sections. On the south shore is the canal, 430 feet long. This will lead the water into ten steel tubes, each twelve feet in diameter, which bring it, in turn, to the ten 54-inch turbines. The water-wheels are directly coupled to ten 5,000 horse-power generators. The work will give 50,000 horse-power at a constructive cost of \$2,000,000.

Mere figures scarcely suggest the immensity of the work. The lake formed by the dam is five and a half miles long and covers 770 acres. A whole township has been covered by it. The dam itself is as long as three city blocks. To complete the task in the two years allotted, a new community of upwards of 2,000 people was created in the wilderness, with complete systems of water-works, sewers and telephones; a hotel, a laundry, a bakery, schools, a department store—in fact, everything necessary in a well-ordered town.

The Hudson River furnishes practically constant power. For four months in a year this may be reduced to less than 50,000 horsepower, but with the storage dams which are being built the flow will be equalized. Upwards of half a million people live within a short distance of the various plants of the system. Already one plant at Mechanicsville generates 7,000 horse-power and runs the street cars of Albany and Troy and the electric works at Schenectady. It is not impossible that New York City itself may be included in the circuit.

This dam is only a beginning. The Sacandaga River, the Hudson's chief tributary, will be dammed at Conklingsville, and an area larger than Lake George will be flooded. And the plan is to make this Sacandaga dam one of a long series of storage dams. If the plans which are being made succeed, the rivers of New York, with the Hudson in the east and Niagara in the west, will put their almost limitless power at the disposal of every community, every factory and every household in the State.

A GERMAN ELECTRICAL FARM

IN the application of electricity to everyday work, Germany has, perhaps, gone further than any other nation. Electrically heated and operated cooking and laundry apparatus is in common use there, but the most striking single development is the electrical farm. Take, for example, Professor Backhaus's estate near Quednau in eastern Prussia, which is only one of a large number of German estates run by electricity.

The Quednau farm covers 450 acres and its dairy handles 1,000 gallons of milk daily. Every part of the farm is lighted by electricity and is in telephone communication with every other part. The dairy has an electrical churn; the barn contains electrically operated feed and carrot-cutting machines, and even the grindstone is turned by a small belt from the shaft connected with the barn motor. The water-pumping apparatus is run by electricity; all the buildings are lighted by incandescent lamps, and there is an electrical pipe-lighter at the doors of all the houses. This farm has, also, its own threshing and grist mill, the machinery of which is turned by a current from the miniature central station, and finally there is a small sawmill which gets its power from the same station. On the farm are all kinds of electrical agricultural machines, including an automobile plow, all run by batteries charged from substations in the fields.

The power for all these various operations—lighting, heating, telephones, churning, cutting, grinding, pumping, threshing and sawing—comes from a fifty horse-power stationary engine moving two dynamos.

From this station the power is distributed to the parts of the farm, and the switchboard is so plainly marked that the commonest farm-hand can regulate the supply to fit the need. At Crottorf a number of small farms have grouped to support one station and have their work done by it.

Such plants as these do more than merely lighten farm labor; fewer workmen are needed and greater profits are possible, and the whole business of farming is made more attractive. The barnyard is lighted by an arc light; night-work in the fields is possible when it is necessary; the stables are warmed in winter and ventilated in summer by the turning of a switch; indeed, the entire farm runs like a machine at the call of the electric current.

TRADE APPRENTICES IN PUBLIC SCHOOLS

SEVERAL rooms in one of the public school buildings of Chicago are given up during three months of the school year to the education of 123 young men, who spend the other nine months as apprentices to the bricklayers' trades. During the morning hours they study the ordinary English branches, while the afternoons are given up to engineering, principles of construction, architecture, elementary mechanics, and other studies having a direct bearing on their work. For each day's work at school each of these 123 students is paid the regular wage of the bricklayers' union to which he belongs.

This school was established by the Board of Education on the joint petition of the union and of the Masons' and Builders' Association, which includes practically all the employers of this class of skilled labor in the city. The management of the school is practically left to the joint arbitration committee of the union and the employers' association. All fines assessed by the committee for the breaking of joint rules go toward the purchase of text-books for the school pupils. Before an apprentice can secure a union card he must satisfy this committee both of his skill and of his good deportment and proficiency at the school. If one of the students should stay away from school without a good excuse, the principal, who is appointed by the Board of Education, reports the absence to the joint arbitration committee, and the time lost is added to the time he must serve as an apprentice to his trade.

Almost without exception, these young

men, who range from sixteen to twenty years old, show great eagerness to take advantage of these opportunities. They recently petitioned for an additional hour in school each day than the other public school pupils. The unique petition was promptly granted.

The association of employers say that the trade-unions have come to stay and that employers must help to make the future members of the unions men of both technical and general education. The plan is completely successful. The National Association of Masons and Builders voted at its last meeting to urge its adoption everywhere.

In Chicago the Carpenters' Union, including thousands of members, has proposed a petition to the public school board asking that similar schools be established for its apprentices during the slack months. The machinists and other trades are likely to follow. The best months for the schooling are not the same in all the trades. The same schoolrooms and the same teachers, therefore, might be utilized; the apprentices to the building trades, say, coming in the winter months, the plumbers and steamfitters in the spring, the machinists in the fall.

The Chicago innovation should interest the people who wish to see a broadening public school system and more intelligent labor.

THE CONTINUED PROGRESS OF A GREAT AMERICAN RAILROAD

IT is a surprising fact that, though the freight rates on the Pennsylvania Railroad on its main line between Pittsburg and Philadelphia are among the lowest in the world, the gross earnings on that line last year reached \$150,000 a mile—at least eighteen times the average gross earnings of American railroads. The last annual report of President Cassatt shows not only how this result was reached, but how the Pennsylvania and other railroads employing similar methods are constantly raising the standard of American railroading in efficiency. By the use of heavy locomotives and long freight trains, the Pennsylvania was able to move the maximum traffic the road under present conditions could handle, averaging 32,000 tons of freight each way every day. An unprecedented business offset the low rates. Provisions were made, moreover, for greatly increased facilities by the application of new methods.

The management arranged for financing four new undertakings. Of last year's twelve per cent. net earnings, half, or \$12,500,000, was diverted to betterments instead of being

paid in dividends. A plan was set on foot to secure new capital of \$67,000,000 by the issue of stock, and another to permit the holders of the \$50,000,000 bonds issued to pay for the New York City tunnel to exchange those bonds for stock, allowing one \$50-share of stock for every \$70 in bonds. Thus a vast sum was provided for, in addition to the \$12,500,000 already earned, to remodel the railroad.

Mr. Cassatt recommends that the equipment of the railroad be kept at the point required by the greatest possible business. It is better, he believes, to store rolling-stock in times of slackness than to suffer from a shortage when business is brisk. Work is already under way—much has been already completed—to grade and straighten the line. When the work is finished, the Pennsylvania, though it crosses the Alleghany Mountains, will have, except for one short stretch, no heavier grades than those of railroads in flat States. The yards are to be rearranged. Despite what was called the "freight-car shortage" which choked up Pittsburg in the fall, Mr. Cassatt declares that the Pennsylvania had locomotives and cars enough, if tracks and yards had been available. More tracks and yards will, therefore, be provided. Some yards, he says, are *too large* to handle trains effectively. Miscellaneous commodities all handled in one place produce confusion. The division-of-labor principle will therefore be employed. The crowded Altoona and Harrisburg yards, for example, will be restricted to general merchandise: coal, coke and limestone will be handled exclusively at two new yards to be built. By such division of the functions of different yards the management hopes to save annually something like \$1,000,000, the sum paid last year in "shifting" expenses and overtime pay to train crews.

A RAILROAD'S PROVISIONS FOR ITS EMPLOYEES

NOR does the Pennsylvania Railroad lose sight of its employees. It has three departments covering three phases of its activity in this particular.

On the lines east of Pittsburg and Erie last year 10,637 men joined the voluntary relief association which, through all its 70,307 members, contributed more than \$1,060,000 to pay for sickness, death and accidents. The company paid nearly \$165,000 for the association's operating expenses.

Nearly 8,000 employees now take advantage of the employees' saving fund, a gain of 942 in a year. These are drawing 3½ per cent. interest on \$3,300,000.

The new pension department grew to such an extent that an increased appropriation had to be made for it. Two hundred and twenty-seven superannuated employees were added to the pension list, and allowances of \$265.13 were paid. There are now 1,200 men enjoying benefits under the system.

IMPROVEMENTS IN LOCOMOTIVES

WHILE electricians are prophesying that electric locomotives will soon take the place of those driven by steam, constant advance is made in the construction of the steam engines. The American locomotive has become "obsolete" a number of times, so completely has the building of them been revolutionized. Details are continually changing. The boiler, nowadays, is raised higher above the six- or seven-foot drivers to permit an increase in its diameter. An express engine often carries a pair of small trailers behind the drive-wheels to gain a wider fire-box and grate. For suburban service, where great pull at starting is needed, the weight of the locomotive has been concentrated on the smaller drivers.

The modern American locomotives are compound engines, getting thereby added power and economy. The Vanderbilt boiler, while it does not impress a layman by any spectacular advantages, gives increased grate area, increased heating surface, and lessens the internal strain on the engine. It is built to wear under the enormous pressure our fast schedules put upon an engine. Fuel oil is being tried in Texas and elsewhere, and there are reports of unquestioned success, although it is said that means of getting rid of the odor of burning oil must be found before its entire practicability is proved.

There are a number of ways in which the steam engine has the electric motor at a disadvantage. The tying-up of all business around Niagara recently by a sudden accident in the great power-house suggests one difficulty. A bolt of lightning might stop one steam train, but it could never block every wheel of an entire division. Trolley-car fires are not uncommon, and the third rails have caused many fatal accidents. The burst of fire and molten metal and the explosive force of a short-circuited power-house switchboard are only hints of the dangerous force which is handled.

The American builders of steam locomotives cannot yet fill all their orders, which come from every part of the world. And, with each order filled, they build better the locomotives which have become the standard of wide use and efficiency.

A NEGRO COMMUNITY RULED BY PRIMITIVE METHODS

THE colored male citizens in the neighborhood of Providence Church, near Dublin, Laurens County, Ga., organized not long ago a unique "Good Government Club," and being curious to learn something of it, Reverend Silas Xavier Floyd, of Augusta, called on the secretary. He found that the secretary was the principal of the village school, and that he was graduated from one of the colored southern universities. The secretary explained the club to Mr. Floyd as follows:

"Our society is a voluntary organization, and has for its object the betterment of the race. It doesn't cost anything to join, and any male citizen upward of twenty-one years old may become a member by taking an oath to be governed by our constitution and by-laws. There are no monthly dues. Now and then we make up a purse to help a needy brother. Our plan is to inquire into the mode of living of our members and correct, if possible, any faults. If a member fails or refuses to correct a fault complained of, he is then tried by a sort of court-martial. The man under charge is allowed to have counsel from among the members of the organization. If he is found guilty, the punishment is usually a flogging given in the presence of the other members. We whip a man for a number of things: getting drunk, wife-beating, vagrancy, selling his vote, failure to provide for his family, failure to make an honest effort to pay his debts, using profane language, and so on.

"It was reported to the society," he went on, "that one man's wife was badly in need of a wash-pot. The man was cited to show cause why he had not provided his wife with the article. He failed to buy one before the trial came off, and, when tried, failed to show how his wife could get along without one and still be put to no great inconvenience. Conviction followed. He was whipped, and ordered to get a pot within thirty days. . . . In riding past the home of another man it was seen by one of our members that the front gate had fallen down. From appearances he had made no effort to put it up. At the trial it was proved that the gate had been down for several weeks, and that his wife had tried many times to get him to take more pride in the care of his home. Conviction followed, and the husband will remember a long time the flogging he got that night. . . . We had a man before us once charged with kissing a girl on the street. The girl did not appear against him;

we could not get her to do so; and the man stoutly denied the charge. He told our judge that he had never kissed a woman in his life. The Judge asked him if he wasn't married. 'No, sah,' he said, 'mah wife's dead. I'm de daddy uv nine chillun, an' I nevah kissed a woman in mah life.' In the midst of much laughter, the Judge asked, 'Did you never kiss your wife?' Without a moment's hesitation the man said, 'No, sah; no, sah.' Then the Judge said, 'Jim, you're the biggest liar in town, and I sentence you to be given forty-nine lashes, but I'll suspend the sentence if you'll agree to leave town within the next five hours.' 'Judge,' said Jim, 'I don't want no five hours: I'll be gone in five minutes.' . . . The strangest case I remember was the case of a man charged with beating his wife. His wife was a hard-working washerwoman. She had complained to us three or four times, but always repented before the time for trial, and would not appear against her husband. When she did come to our meeting, she said, 'Now, Judge, I's a-gwineter tell you evah'ting.' And she told how her husband would get drunk and come home and curse and beat her unmercifully. She gave a graphic account of the last whipping she had received. The Judge said, 'I sentence this man to be given one hundred and one lashes—the maximum of the law.' 'Dar, now!' exclaimed the woman. 'Dar, now! I's done fixed you at las'! I tol' you 'bout beatin' on me lak I wuz a dawg!' Turning to the Judge, she said, 'Judge, I'll tek de whuppin' fur him ef you'll lemme; I 'spec' he'll be good atter dis.'"

It is said that the society is doing a world of good in the community where it is organized. It is making better citizens and better husbands of the blacks who are members, and even those who have not joined, it is said, have caught the spirit of the thing and are benefited by it. Not one-half as many colored people gather now in the village on Saturdays and spend their time in gossip and their wages for candy, red lemonade, whisky and tobacco.

OUT-OF-DOOR TREATMENT FOR POOR CONSUMPTIVES

AT a recent meeting of the New York State Conference of Charities and Corrections, Doctor Alfred Meyer, of New York, advocated the more general use of the fire-escape in the treatment of tuberculosis when better facilities seemed impossible. He illustrated the idea by a case in his own practice. A consumptive girl, fourteen years old, took

her out-of-door rest cure daily on the fire-escape of the third floor of a tenement-house near First Avenue and Eighth Street, New York. On the shortest day of the year, with the temperature twenty-four degrees above zero, she spent four hours and a half outdoors. Her case was a bad one when the treatment began. After the winter she spent daily more time on the fire-escape, bundled up to meet the weather conditions. She rapidly gained appetite and strength and weight; her fever and cough lessened and all complications disappeared.

There is a gradual but steady reduction in the death rate from tuberculosis. The percentage in New York last year, for example, was ten per cent. less than the year preceeding. There are not sanatoriums enough, and most of the existing ones are not within the means of the poor. Perhaps, Doctor Meyer suggests, there has been an overestimation of the value of altitudes and an underestimation of pure air *per se*; perhaps there has been too much medicine used and too little attention given to light, food, baths and careful medical supervision. Wherever physicians are finding ways of lessening fatality without sending patients away, they are doing so. And especially is this necessary among the poor. Fire-escapes are practically universal on tenement-houses; they are accessible even to the very weak; they are large enough for a reclining chair or couch; and they are convenient for the necessary supervision and attendance. Fire-escapes are not open to the objection of chimney smoke and gas which is raised against out-of-door treatment on roofs. They are sheltered in many directions from the wind, and are easily covered, when it is necessary, from wind, rain or snow by simple screens or bits of awning. It seems as if Doctor Meyer's idea of making use of fire-escapes to save lives in other ways than that for which they were built is admirable practical medicine.

THE MAN WHO FOUND HIMSELF AND HIS WORK

THE son of an immensely wealthy American, having graduated from college, went to Paris to study art. He worked hard in the Paris studios for three years. One day he made up his mind that he would never be a great artist, and that he would rather be a successful farmer than a fairly successful painter. Now—although still a young man—he has a model farm covering 10,000 acres in Illinois. He knows every foot of it, what it should produce, and he sees that it produces everything it should.

He has built a magnificent house, in which not an ornament jars the finest taste. He goes to Europe every winter and studies European methods of scientific farming and cattle-raising. He is developing the land as his fathers did before him. He employs scores of men; he helps the smaller farmers about him; he is likely to be a great factor in the development of the State during the next few years. And this is the story of a young American who works for the love of it and who is a great success because, anxious to do things, he knew when he had not "found his work."

THE ART OF CASTING BRONZES

IT is one of the most interesting processes in the world, the taking of the plaster figure which the art of the sculptor has wrought and duplicating it in bronze. It is something of an art itself, so delicately perfect must be the reproduction.

The founder begins by laying the sculptor's plaster pattern face down in the dirt and burying it about half way—the dirt being enclosed in a shallow iron box or tray. On the back of the figure left exposed the molders lay on a firm, close coating of the reddish-brown earth—earth dug out of a certain red-brown hill near Paris. As the process of fitting on the earthen armor proceeds, each piece becomes a thick block neatly joined to its neighbors, and each having a wire skeleton or core run through it for greater strength and a loop to lift it by. When the whole figure is covered, a second iron box is fitted over the first just as the two parts of a waffle-iron go together; and when this has been filled with sand it forms a bed to hold all the little blocks in place. The whole mass is then turned over, and the half in which the figure was first laid temporarily is removed, the loose sand is shoveled away, and the front of the figure is exposed lying in a bed of jointed earthen armor.

The front must now be covered piece by piece like the back, but the parts are much more numerous and irregular. A single eye is often a matter of two or three tiny blocks neatly internotched. Two men will work on opposite sides of the same face, shaking their white powder-bags over it that the earth may draw away from it freely, shaping the parts with slender spatulas, lifting the tiny pieces on sharp, two-pronged forks, spraying them with water; yet, when they finish, each has followed his own idea, and the jointings for one side are entirely different from those on the other.

The figure is completely blocked in. The first half of the waffle-iron is again laid upon

the second, filled snugly with sand and all is bound firmly together. Then the figure itself comes out, leaving a hollow in the centre.

Now, if the bronze were poured into this hollow we should have a solid bronze figure, very heavy and very costly. So they fill the cavity with soft earth until it forms an earthen image instead of a bronze one. This they also lift out bodily, and with their sharp little tools cut off a layer from its entire surface about a quarter of an inch thick, so that when it is returned to the cavity there remains this narrow space all around it to be filled by the molten bronze. Now the mold must be dried. Into the great oven it goes and stays for many consecutive hours, kept hot day and night until it is almost as hard and dry as a brick.

Then this many-jointed sarcophagus, bound and clamped within its waffle-iron frame (which is technically spoken of as a "flask"), appears tilted up on one corner so the metal will run from the entrance at the top down through the many little channels cut for it to the several parts of the statue. The men stand ready with sacks tied about their feet and legs to protect them from the splashing, overflowing metal. The livid crucibles are drawn forth, the metals are poured like many-tinted quicksilver into the great "ladle"—often a full ton at once—and mixed in the proportion of ninety parts copper, ten parts tin and three of zinc, or thereabouts, according to the judgment of the caster. The crane swings around, slowly lifting the heavy mass over the opening in the mold, and the men take their positions at the ladle handles with skimming-rods. The signal is given, the ladle tips slowly on its trunions and, with a shower of fine sparks, the molten stream descends.

After the pouring, when the metal has hardened, the mold is broken open, the neatly fitted blocks, now crumbling and blackened, are shoveled aside, and water is thrown hissing upon the still hot metal to anneal it. When finally the statue stands swept clean of its earthen chrysalis many days' work are yet to be done on it. It is filed smooth and bright, it is gone over patiently with hammer and chisel, and if it has been cast in several pieces the pieces are to be neatly riveted together. The finishing touch is the coloring. The real color of statuary bronze is yellow like that of brass. The rich brown tint of the statues we see is made by treating the metal with acids.

Then all that remains is for the drays to carry it away, for the derricks to lift it to its high pedestal, for the veil to be drawn from it, and it becomes an established statue.



CHOCOLATE MAKING IN AMERICA

BY

HERBERT S. HOUSTON



MONTEZUMA, WHO INTRODUCED CHOCOLATE TO EUROPE

WHEN Montezuma raised a golden cup to his lips for refreshment one trying day after the fall of his kingdom, he introduced a new drink to the world. Bernal Diaz, one of the Spanish officers with Cortez, observed the monarch, and in a history he afterward wrote of the

Massachusetts Bay. Thus chocolate completed a circle by returning to the country where it was discovered by the Spaniards nearly a century and a half before. And it was in this country of its discovery that chocolate was destined to reach its highest estate as a food and drink.

I

BEGINNINGS OF A GREAT INDUSTRY

On the Neponset River, in the old town of Dorchester, the first chocolate mill in the United States was established in 1765. Fifteen years later this mill became the property of Dr. James Baker, the first in a succession of remarkable men who founded and developed a great industry. It is interesting to observe how much of New England conscience became a base in establishing a business enterprise. The principle was laid down in the beginning that there should be unflinching honesty in every stage of chocolate making, to the end that the product should be of perfect purity.

In the hundred and twenty-two years since, that principle has been deemed of more importance than any new process or machine. This fidelity to an ethical idea has produced an inheritance and a tradition similar to



THE PURITANS, WHO RETURNED CHOCOLATE TO AMERICA

conquest of Mexico he described the act and its effect. Thus it came about that when the Spaniards took ship for Cadiz they bore with them not only a yellow metal but a dark brown nut from which chocolate was made. This knowledge of chocolate making was kept a secret for many years in Spain, but it finally crossed the Pyrenees into France and spread throughout Europe. The way of this spread is interesting. In the refectories of the Spanish monasteries chocolate had become such a famous beverage that the monks, wishing to remember their brothers in France in an especially friendly way, sent them presents of the cocoa beans. The daughter of Philip III., when she went to Paris as Queen of Louis XIII., bore with her from Madrid the news of the new drink from America. And so the cheering cup was passed on. It reached England before the time of Charles II., and some of the Puritans took it with them to the thriving colony on

those perpetuated in the craftsmen's guilds of the Middle Ages. And this growth of character in an industry is really of more vital significance after all than any mechanical invention or business system. It is that fundamental philosophy which President Roosevelt has recently been preaching as the basis of good citizenship; and it is just as important in manufactures as in citizenship.

But this article is not a homily but a history. On the Neponset River the chocolate mills multiplied. For many years Walter Baker, a grandson of the founder, was the head of the business, and it came to bear his name. For two years, following his death in 1852, Sidney Williams had charge of the business, and then, in 1854, it came under the direction of Henry L. Pierce. For forty-two years, and until his death, this able captain of industry was in control. It was a period of great development and expansion in the business of the company. There was little



OLD STONE MILL OF WALTER BAKER & CO. ABOUT 1850

change during these progressive years in the processes of manufacture, and absolutely none in the fixed principle below those processes; but there was marvelous growth in the consumption of chocolate. This was not something which, like Topsy, "just grewed" but it was

the result of design and splendid generalship. Herein lay Mr. Pierce's power as a constructive business man. He not only made a product, but he literally created a larger market for it. And he did this by methods that were in advance of his time. He was one of the first American business men to perceive the creative force in advertising. The chocolate mills at Dorchester, as well as nearly all other food producers, sold their product to grocers and they in turn gained buyers after the stereotyped methods of retailing. But Mr. Pierce changed all this by appealing direct to the consumer through general advertising. He believed that here was his ultimate market and that it would be



THE GREAT MILLS OF WALTER BAKER & CO. AS THEY ARE TODAY

THE WORLD'S WORK ADVERTISER

large or small in proportion to the convincing knowledge that could be spread among the people concerning the Walter Baker chocolate and cocoa. The results from working out his belief make one of the most interesting chapters in modern industry and commerce. In 1860 the United States consumed 1,181,054 pounds of chocolate and cocoa. In 1902 the consumption had grown to 48,785,688 pounds; the stupendous increase of 4,030 per cent. in forty-two years. During this same period the population of the country had increased only a little over 151 per cent. Of course, it would be too much to claim that this wonderful growth in the use of chocolate was entirely due to the policy of the Walter Baker Company, but that policy had much to do with the growth. In every home in America where magazines and newspapers were taken—and that meant practically every home—the comely chocolate girl became a familiar figure and "Walter Baker" literally household words. The money value alone of this good will among the people, created by advertising, is capitalized at a million dollars in the stock of the company, and the courts of Massachusetts have decided that this is a conservative value.



Following the lines on which the founders had carried the business to such a high degree of prosperity the men who have had the management of it during the last six years have, by the introduction of many new mechanical appliances, and a skilful use of the latest improvements in marketing and advertising their products, greatly increased the sales and placed the establishment on even a firmer foundation in the forefront of the great manufacturing concerns of the country.

II

THE BIG MILLS ON THE NEPONSET

But what of the product itself and its manufacture? In so many thousands of homes, from the days of our great grandparents until now, Walter Baker chocolates and cocoas have been used, that a little visit to the great mills on the Neponset cannot fail to be of interest. To drive down the hill from Milton past them is to get deep aromatic whiffs that lead one to imagine that he is skirting the domains of "Araby the blest." And within

the mills there is a spick and spanness that make the aroma even more delicious for they seem to fill it with such a fresh and wholesome cleanliness. The whole theory of the process in the mills is that the cocoa bean is a product of nature and that what

it needs is refining or purifying, just as gold needs refining to be brought to the pure ingot.

Chocolate is obtained from the cocoa tree, a tropical plant which reaches a height of between twenty and thirty feet. It bears pods some nine inches long, within which are closely packed the beans. These are about the size and shape of almonds, and of a brownish color when dried. They come to the market in burlap bags, and on the lower floors of the great mills the first step in purification is taken by cleansing the beans from any dust and foreign particles that may have become attached to the shells. Next comes the roasting, a most important operation, upon which depends to a great extent the flavor of the beans. Too little roasting leaves them crude and under-flavored, while too much tends to make them bitter. This process is

carried on in the upper stories of the mills, the cleansed seeds being put into large cylindrical roasters holding a ton each. These machines keep the seeds in constant motion over hot pipes for about three hours. When they are "done to a



WALTER BAKER.



HENRY L. PIERCE.



GRINDING ROOM IN ONE
OF WALTER BAKER & CO.'S MILLS

turn," they are dropped through big hoppers to the floor below; there they are broken into small fragments. The shells, already loosened by the roasting process, are then removed by ingenious winnowing machines, where the bean fragments are fanned within screens and the light shells neatly separated from the solid fragments of the beans. The manipulation of these winnowing machines requires experience and care, for a workman may easily blow away his salary by admitting too much current to the fans.

These shells, once separated, are ready to be packed in boxes and placed on the market. Cocoa shells are well known and widely used, making a palatable and inexpensive drink with a slight flavor of chocolate about it.

III

THE PROCESS OF MANUFACTURE

The cracked cocoa, freed from the shells, is now destined to be turned into chocolate without further ado. This is accomplished by a process of grinding. From the winnowing floor the cleaned fragments drop another story, again through capacious hoppers, down to the great grinding rooms. Stretching away in seemingly endless ranks, stand big, gleaming, intricate machines which receive the cocoa

beans as they are fed into the hoppers above and grind them into a fine smooth paste or thick liquid. As this liquid flows thickly out at the bottom of the burnished grinder, it falls, if it is to be a plain chocolate, into oblong molds which give it the form familiar to housekeepers as "Baker's Premium No. 1 Chocolate." It is now in the molds, but it is not yet molded. For that purpose it must be carried into a room where you may follow it but will probably not care to linger. For while it is scrupulously clean, like the rest of the mills, and is odorous with chocolate, it is perhaps the noisiest room you ever entered. Troops of horsemen seem to be clattering somewhere near at hand or a boiler factory to be in lively action; but it is only the automatic molders. If the chocolate were pressed into the molds, it would merely stick to the presser, mold and all; so, instead, it is shaken in. The pasty lump of chocolate in its metal mold is put into a wooden tray on a table, which is shaken by steam and makes the molds bob up and down in a most deafening manner. Careful watching tells just when the mass of chocolate is fitted to the mold, and away they all go to the large airy cooling rooms where there are stacks and layers of molded chocolate cooling off.

In making sweetened chocolate, pure sugar is added in a certain proportion before molding, and also the finest quality of vanilla beans, if it is to be a vanilla chocolate.

It is not perhaps generally known that the German Sweet Chocolate was named in honor of an old employe of the Walter Baker Company, Samuel German, who originated this form of preparing sweet chocolate. The great German chocolate machine in mill No. 1 makes five tons of sweet chocolate in a day. This wonderful machine carries on all the processes by itself, beginning at the cracked cocoa, grinding it, mixing the sugar and regrinding.

In the manufacture of breakfast cocoa, a portion of the oil of the chocolate bean is removed by hydraulic pressure, and the pressed mass remaining is ground into minute particles. The process is continued until the high degree of fineness and the brilliant color noticeable in the Walter Baker Cocoa is obtained.

IV

CHOCOLATE AS A PERFECT FOOD

It was no less an authority than Baron von Liebig who called chocolate a perfect



MAKING A CUP OF REFRESHING CHOCOLATE

food. In analyzing its qualities, the great German writer on dietetics said: "Chocolate is highly nourishing and easily digested and is fitted to repair wasted strength, preserve health and prolong life." This is high praise,



THE GERMAN CHOCOLATE MACHINE WHICH MAKES FIVE TONS OF SWEET CHOCOLATE A DAY

THE WORLD'S WORK ADVERTISER



MOULDING THE CHOCOLATE

indeed, but its truth is confirmed by the experiences of thousands of people and is attested by the opinions of many writers of a fame almost equal to that of von Liebig. For example, Dr. Edward Smith, F. R. S., in his work in the International Scientific Series

on "Foods," says, after giving an analysis of the cocoa bean: "It is less exciting to the nervous system than tea or coffee and at the same time it contains a much larger proportion of nutritive material." And that high priest of gastronomy, Brillat-Savarin, in his great work on the "Physiology of Taste," says that "chocolate is nourishing, easy of digestion and does not possess those qualities injurious to beauty with which coffee has been reproached; carefully prepared, it is an article of food as wholesome as agreeable." Then with delicious conceit Savarin adds: "Out of zeal for science and by dint of eloquence I have induced many ladies to try this experiment. They all declared in the beginning that it would kill them; but they have all thrived on it and have not failed to glorify their teacher." But the commendation of chocolate could not be presented in several complete issues of the *WORLD'S WORK*. Indeed, that particular part of it in which the Walter Baker products are singled out for special mention would require nearly as much space. For physicians and writers on dietetics have long given preference to the Walter Baker Chocolate and Cocoa because of their



WRAPPING ROOM, BAKER'S BREAKFAST COCOA

THE WORLD'S WORK ADVERTISER

known purity and their absolute uniformity of excellence.

V

HIGHEST AWARDS AT EXPOSITIONS

This superiority has been declared time and time again by the highest awards at exhibitions held both in this country and abroad. This array of medals is most impressive; even a mere cataloguing of them is impressive. There have been over forty of them in the last half-century. The first award was at the Franklin Institute, Philadelphia, in 1852. Three awards have been received from Paris Expositions (1868, 1878, 1900) and one from Vienna (1873). At the Centennial Exposition, Philadelphia, 1876, the gold medal; and highest awards at the World's Columbian Exposition, Chicago, 1893, and the Pan-American Exposition, Buffalo, 1901.

VI

THE SHIELD OF A GREAT NAME

In recent years there has been a widespread adulteration of food. Many states have enacted stringent laws concerning the matter and committed their enforcement to a State Food Commissioner. So general did distrust of the purity of foods become, that the whole subject was rigidly investigated by a committee of the United States Senate. It was found that many cocoas were chemically treated in their manufacture and that some were adulterated with starch, arrowroot and other foreign ingredients. Naturally, people have wondered, when they have had such authoritative proof of adulteration, how they could be sure of protection against it. They could not turn their kitchens into laboratories and have all food analyzed. By



GETTING THE COCOA-BEAN READY FOR SHIPMENT TO WALTER BAKER & CO.

THE WORLD'S WORK ADVERTISER



NATIVE PICKERS OF THE COCOA BEAN

that instinctive reasoning that marks men and women in times of perplexing doubt, they turned to the protection of great names of long-standing reliability. Thus it has been that the Walter Baker Chocolate and Breakfast Cocoa never have increased so rapidly in sales as during these recent years of agitation

about impure foods. People have had the confidence of long acquaintance and of inheritance in the name of Walter Baker. They have believed that there was no surer test than time, especially if that test has continued through a hundred and twenty-two years.



THE NOON HOUR, MILL NO. 1, WALTER BAKER & CO.
THE WORLD'S WORK ADVERTISER



A GROUP OF BUILDINGS IN WHICH THE ROTATION OF PROCESS IN GAME BOARD MANUFACTURE IS CARRIED ON WITHOUT A SINGLE BACKWARD STEP

A GREAT GAME THE FOUNDATION OF A GREAT INDUSTRY

TO the average man in America the interest in his business amounts to a passion. It is a great game to him, a game that he plays with as much if not more enthusiasm than he does his golf, tennis or billiards.

It is this zest for business, this enthusiasm for the great game of commerce that carries him forward to success in such a marvelous way. To many men the game of business is far more interesting than any other, and the playing of it becomes such an important part of their life that they cannot do anything else.

How few business men can break away from their offices when they have acquired fortunes or reached the very pinnacle of success; then is the order of things reversed—instead of the man playing the game, the game plays the man.

Though the intense application in modern business life accomplishes great things and this very concentration has done much for American commercial supremacy, the effect on the man in the long run is in direct proportion to the amount of sustained effort.

It is realized more and more that work, sustained, concentrated, exacting, must be



THIS GREAT MACHINE SHAVES OFF A LAYER OF WOOD FIVE FEET WIDE AND YARDS AND YARDS IN LENGTH

THE WORLD'S WORK ADVERTISER



SUBJECTED TO THE EMBRACE
OF A HYDRAULIC PRESS

important as the "gospel of wealth" or the gospel of medicine—indeed, all three are intimately connected, each depending on the other.

He that inventeth an interesting game nowadays is as much honored as "he who taketh a city" or discovers a "new" system of wireless telegraphy, and rightly so, for he adds to the interest, the enthusiasm in the playing of the great game.

Out of this recognized need for amusement that drives away business worries has grown a great industry—an industry that would not have been possible a few years ago when recreation did not play such a large part in commercial economics.

The Carrom-Archarena Company, of Ludington, Michigan, have built up a great business out of the demand for good games. Their combination game boards, on which fifty to a hundred different games, all good, can be played, have been sold by the thousands, and still the demand increases.

balanced by a certain amount of amusement that is interesting enough to take the mind off business—that is, the game of play must offset the game of business or the player loses his capacity for playing either.

The gospel of recreation is recognized as

A board twenty-nine inches square, which may be kept behind the door, is so planned that 100 different games may be played upon it: games that require dexterity of hand and quickness of eye, games that need thoughtful planning and generalship and games of pure fun and chance. Every sort of taste may be satisfied, every kind of mood catered to on this *multum in parvo* game board.

For many men a billiard table is the necessary thing to banish business worries, but few are able to have it in their homes. The Carrom-Archarena game board or their light inexpensive portable billiard and pool table makes a visit to the club or billiard room unnecessary.

For the nervous, prostrated, for the enervated the Combination Game Board is a remedy that relieves without reaction. Out of its many games some will be found to suit all ages and both sexes.

The character of a manufactured article like the character of a human being, is largely dependent upon its environment and handling. Evil communications corrupt good manners in manufactures as in man, and to the discerning spectator it becomes evident that the game boards manufactured by the Carrom-Archarena Company have the advantage of a vigorous bringing up, a careful scrutiny during development and a final polish that equips each member of an enormous family to hold its own in the battle of life before it. Good stock, too, is all-essential to the success of both man and manufactured articles; without a hardy constitution failure is the rule.

To one side of the Carrom-Archarena works is the lumber yard, piled high with the products of the nearby forests; maple, birch and basswood logs sawed into five-foot lengths



A ROW OF LATHES BY WHICH THE DISC RINGS, SPINNING TOPS, ETC., ARE TURNED AUTOMATICALLY



A ROOM IN THE WAREHOUSE. GAME BOARDS
READY FOR PACKING



VARNISHED AND POLISHED GAME BOARDS SET TO DRY. A STACK OF ROUND CROKINOLE PANELS IN THE MIDDLE FOREGROUND

lay in orderly rows like a battery of guns ready for action. This is the stock, the hardy growth of the Michigan woods. To the right extends a group of buildings which appear to be set in a haphazard fashion, but a minute's thought makes it evident that there is a well defined plan—separate buildings makes fire fighting easier, and placed in proper order, the rotation of processes of manufacture are carried on without a single backward step.

From one of the buildings comes a steady, grumbling roar that excites the curiosity. In front of the wide door is a pit of boiling water in which is floating several logs five feet long and from eighteen inches to three feet in diameter; presently one of these is drawn steaming to the surface, peeled of its bark, rolled through the wide door and, with the aid of chain tackle, fitted to the chucks of a gigantic lathe. With a shriek the power is turned on and the five-foot tooth-like knife begins to peel off the outer inequalities of the log. As a beaver gnaws round the trunk of a tree, so this great machine shaves off a layer of wood from the log five feet wide and yards and yards in length—a perfect sheet of wood of paper-like thinness, or as thick as may be required. This is the basis of the game board. The veneer shaved by this great lathe, when dried and glued together three ply, centre of bass wood three-sixteenths of an inch thick and two outer layers of maple one-sixteenth of an inch thick, the grain running in opposite directions, makes a panel marvelously light but stiff and strong and incapable of warping. The veneer after being dried is sawed approximately to the desired size, run through a machine which spreads

both sides of the centre layer with glue at one roll of its glue-coated cylinders; the two outer sheets of maple are added and the pile of panels are subjected to the embrace of a hydraulic press which squeezes them with a pressure of 150 tons, a clamp maintaining the pressure until the glue is dry and the three layers become one homogeneous whole. The panel is the basis of all the Carrom-Archarena game boards, and special care is taken that each one is perfect. In the work of making a Carrom-Archarena game board over thirty pairs of hands participate—actually handle the board—and many of the processes are in operation simultaneously; while the panel is being made the net pockets for that particular board are being knotted, the frame is being sawed, and the disc rings, spinners and ten-pins are being turned, some of them automatically by machines constructed specially for the purpose.

Waste is a sin in modern manufacturing, and constant efforts are being made to guard against it. Waste of human labor is perhaps the most expensive of all, and more machines are invented to save human effort than for every other purpose. The Carrom-Archarena Company early realized the force of this law and installed a number of machines to do away with hand work. The diagrams on the game board are printed in two colors with one operation by a power press; the fine smooth finish of the natural wood, usually accomplished by an expensive combination of sand-paper and elbow grease, is put on at the Carrom-Archarena works by swiftly revolving sanded cylinders that smooth both sides of the board at once better than a man could do it in hours. The completed boards, composed of nine



pieces, is put together by the pressure of a workman's foot and a blow or two of his mallet by an assembling machine.

From the time the carpet of wood leaves the veneering lathe through the various processes of fitting, marking, varnishing, polishing, the fitting of pockets and rubber cushions, the packing and final shipping, singly or in carload lots, not once does a game board retrace its steps. It is this power of organization that made it possible to ship over 120,000 game boards last year and make 1,500 boards per diem, as is being actually accomplished today. The Carrom-Archarena Company also manufacture pool and billiard tables which are marvels of efficiency, accuracy and cheapness.

Out of the demand of people for amusement of a varied kind—an amusement always available—has grown this great industry on

the shores of Lake Michigan in the heart of the region from which comes its raw material—an industry that employs upward of 300 people and whose factories cover the space of a city block.

From small beginnings—a single room in a small building, which is now but a corner of one of the factory buildings—this manufacture has spread and its business has grown until its great plant, with a capacity of 1,500 boards a day, is taxed to the utmost. It is only another example of the truth that a good article, honestly made and backed by American enterprise, succeeds beyond all expectations.

On request to the Carrom-Archarena Company, Ludington, Michigan, a catalogue showing all the styles of game boards and equipments, in their natural color, will be sent.



FOUR OF THE HUNDRED GAMES THAT CAN BE PLAYED ON THE CARROM-ARCHARENA GAME BOARDS



GOLD ROCK, THE GATEWAY TO THE MANITOU GOLD FIELDS

THE INDUSTRY OF GOLD PRODUCTION

ITS GREAT GROWTH AND ITS EFFECT ON OUR PROSPERITY—NEW GOLD FIELDS

BY

ROGERS DICKINSON

THE thirst for gold—the unquenchable, all-pervading desire for the basis of all wealth—has been the mainspring of progress since the beginning of things. Gold! Gold! Gold! has been the talismanic word that has sustained men in their fight against the wilderness, that kept the faces of the Spanish voyagers set toward the Eldorado when navigating strange seas, that prompted the “forty-niners” to paint on their “conestogas” the words: “Pike’s Peak or bust.” Indomitable men of every land have cut their way through thickets, plodded across deserts, fought wild beasts and wilder nature, endured hunger, thirst, numbing cold and consuming heat for that most sought for of all things—gold!

Following the blazed trail, the shifting sand tracks, or the snow prints of the prospectors, of those sturdy, untiring men, has come progress, wealth and civilization.

Cities spring up at the shaft’s mouth, steamboats displace the birch-bark canoe, and railroads crawl toward the mines where formerly the whoop of the Indian and growl of wild animals was heard.

The prosperity of a nation depends largely upon its supply of gold—abundance of gold

means power and plenty—and it may be truly said that to its enormous production the prosperity of the United States is largely due. Never before was the output of gold so great nor has the country been more prosperous.

From the discovery of America in 1492 to the close of 1800, the world’s total production of gold was \$2,371,000,000; from 1801 to 1865, \$2,735,000,000; from 1866 to January 1, 1902, \$5,231,000,000. Thus may be seen that of the \$10,337,000,000 total world’s gold production to January 1, 1902, 23 per cent. was produced the first 308 years after the discovery of America; 26 per cent. the first sixty-five years of the nineteenth century, and 51 per cent. the last thirty-six years. These figures signify the magnitude and rapid growth of gold mining, and it is predicted by eminent authority that the ratio of production will increase even greater during the twentieth century.

I.

THE DISCOVERY OF NEW GOLD FIELDS

About eighteen years ago, when the Canadian Pacific Railroad blasted its line through the rocky ridges, precipitous cliffs



AN OUTCROP OF GOLD-BEARING QUARTZ

A group of shareholders on a vein of the Twentieth Century property. The width of the vein is shown by the two outside figures

and lofty hills of western Ontario on its way to the Pacific Coast, an occasional deposit of mineral and stringer of quartz marked the way. These discoveries to the prospector would spell gold, but the railroad builders did not understand Nature's writing. Their minds were filled with grades, tangents and angles, so the news of the quartz veins percolated slowly to interested hearers.

The territory was claimed by both Manitoba and Ontario, which also retarded development. After the disputed territory was ceded to the Province of Ontario, hardy men came into this virgin country, and with keen eyes and tireless bodies went into the woods or drifted in pairs over the lakes in birch-bark canoes.

After the pioneers and prospectors, came the miners, who sank shafts where the prospector staked his claim, and thus opened Nature's treasure chest for the use of man.

After many years of prospecting and mining in Montana, Colorado, Arizona, Mexico and elsewhere, Mr. Anthony Blum and Augustus Trudo, M. E., seven years ago were attracted to the district, when the rush of prospectors made rich discoveries of gold in the Manitou Lake regions, and after camping on glacier-swept ridges and mountains, paddling over lakes and rivers in Western Ontario, measuring and sampling outcroppings of ore, they had the choice of the country, and, regardless of cost, selected and purchased the best properties, and thus

the Twentieth Century Mining Company, one of America's successful mining enterprises, was born. Mr. Blum drew the first check in payment of mining property in the Manitou regions.

Unlike placer mining, which is merely the gathering up of the particles of gold eroded out of the rock by natural forces and deposited in river beds and banks which sooner or later give up the last atom of the precious metal, the extraction of gold from the rock itself is really a manufacturing business, as legitimate and safe as the manufacture of steel, lumber, cloth, etc., with the exception that in the production of gold there is always a waiting market—the price never fluctuates, the product is money itself.

The gold fields of western Ontario are of volcanic origin. Ages ago the earth's crust was broken by the fires of internal heat, and from the earth's interior liquid quartz and gold rushed into and filled the fissures and crevices which, when cooled, formed defined veins from the surface clear down to the molten depths. Therefore the veins are richer in metal as the source is neared.

II

THE GATEWAY TO THE NEW GOLD FIELDS

From Dinorwic, or Wabigoon, on the Canadian Pacific Railroad, two separate steamboat lines operate over Wabigoon and Minnehaha lakes and Snake River, past rock-rimmed islands, indented shores

covered with splendid timber, to Beaudreau's Landing, ten and odd miles distant. At this point one may satisfy his always hearty appetite; here also stage connections are made which run over the government road, hedged thickly with virgin woods, six miles distant to Gold Rock, a village set on the end of Trafalgar Bay, which is destined to grow very fast as the mines near by are developed. The village has a store, post-office, hotel, school and many log houses. The Big Master mine is about one mile distant, and the roar of its stamps can be distinctly heard.

Two steamboats ply Trafalgar bay and the Manitou waters southward about forty miles, carrying passengers and freight to the mines and lumber camps in the vicinity. These steamboats also make trips over Manitou Lake, eight miles from Gold Rock, to the Twentieth Century's landing, from which the company's mine, mill and camp may be reached over its own road, about one mile distant.

The Twentieth Century Mining Company's camp nestles on the south side of a ridge, protected from the sharp blasts of winter winds, and surrounded by low, rocky hills which clearly show the effect of volcanic upheaval; the scraping glaciers have exposed the quartz veins, and thus saved much labor to the miners. At one side of the camp rises a low tower enclosing the shaft's mouth, the entrance to the mine, and on the higher slope stands the towering mill. The air is filled with the thunder of the pounding stamps, punctuated at regular intervals by the cough of the air compressor, and plumes of spurring steam and black wood smoke tell of activity in the engine and boiler rooms, while the black iron car traveling to and fro over the trestle leading from mine to mill betrays the cause of all this activity.

The success of a gold mine—that is, its dividend-paying power, depends chiefly upon the size of the ore deposit and gold contained therein. If the deposit is large, and the mineralization such that the gold may be extracted and leave a profit above cost of operation, it is simply a question of development of the

mine and machinery to handle the ore. The greater the capacity, the larger the profits, for overproduction or glutting the market is impossible.

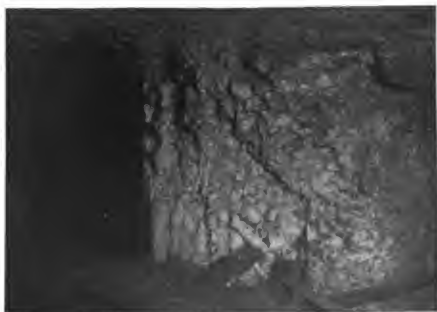
A tour over the Twentieth Century Mining Company's Ontario property of 269 acres, and the mine underground, is only necessary to convince one that the quantity of ore is almost limitless. The writer saw the masses of mineralized quartz of each of the eight veins which crop out in plain sight, six, eight, ten, eleven, ten, twenty-six, nine and twenty feet wide, and traced them at intervals along a half-mile length of the company's property.

III

THE ALCHEMY OF MODERN MINING

It has been proved that there is gold in sea water, but the cost of extraction exceeds its value; just so there is ore which holds its precious charge so tightly that the cost of separation is prohibitive, and there are veins of ore, though rich, whose small size prevents profitable mining. The ore of the Ontario gold fields, on the contrary, in the heart of which is the Twentieth Century Mine, is free-milling ore—that is, the gold in the ore is free from mineral or chemical combination requiring crushing (disintegrating), water and mercury only, to save the gold, the cheapest of all processes for the reduction of gold ores.

Into the very heart of the second of these eight quartz veins opens straight down the black mouth of the 6x11-foot double compartment shaft: the entrance to Nature's



A GOLD-BEARING QUARTZ VEIN 28 FEET WIDE

At junction of the first level with crosscut



A PANORAMIC VIEW OF THE TWENTY

From the mine shaft house, on the extreme right, the gold ore is carried from the mines over the elevated track.

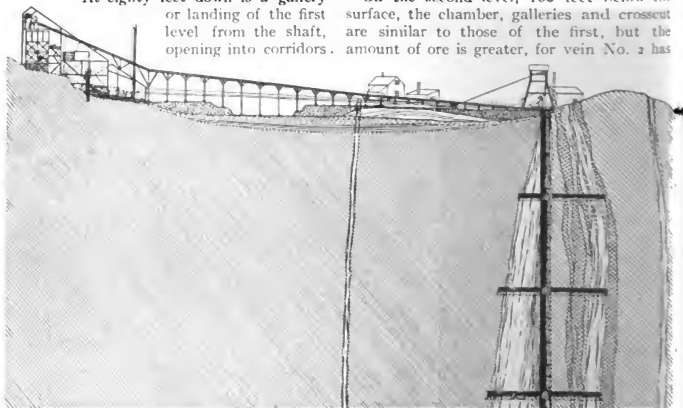
well-guarded treasure chest. From its depths come the rapidly repeated dull thud of the compressed air driven drills, confused by many echoes, while the slow chug-chug of the mine's tireless guardian, the underground pump, sounds when the roar of the drills cease.

The first thirty feet of the shaft is closely built up with massive timber, after which the only timber in the mine is that placed at intervals of eight feet for ladder-ways and landings, supports to the skip-track and guides. Therefore, the white rock of the quartz veins can be distinctly seen.

At eighty feet down is a gallery or landing of the first level from the shaft, opening into corridors.

(levels) connecting with the north and south crosscuts. Vein No. 2, eight feet wide upon the surface and upon which the shaft was sunk, shows ore in the north crosscut twenty-eight feet wide. Vein No. 3 in the south crosscut shows ten feet of quartz throughout, and everywhere the hewn walls show irregular streaks and patches of rich mineral. As the shaft descends below the first level another quartz vein appears in the black wall, a blind vein, unsuspected until the shaft was sunk, and which widens as it goes deeper.

On the second level, 160 feet below the surface, the chamber, galleries and crosscut are similar to those of the first, but the amount of ore is greater, for vein No. 2 has



CROSS SECTION OF THE TWENTY

The light perpendicular streaks indicate the size and location of the quartz veins.



MINING COMPANY'S GOLD MILL AND CAMP

(left), where the gold is extracted. Four of the eight veins on this property are within the space shown in this picture

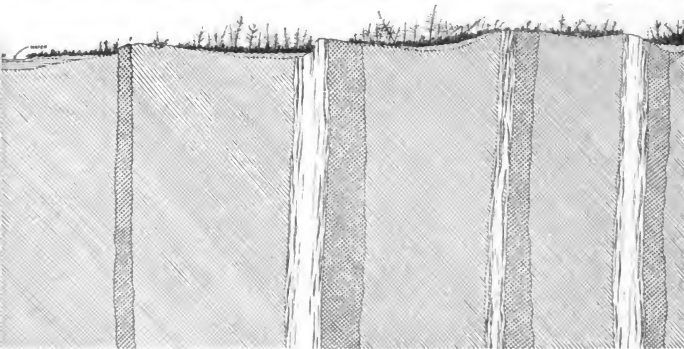
widened to thirty-four feet, and vein No. 3 shows ten feet of ore, and the hanging wall has not been reached. The ore in these veins is much richer in mineralization than on the upper level.

The third level, 240 feet below the surface, where the thermometer stands always at the temperate mark, and which neither wind, tempest nor rain disturbs, reveals a still larger ore body of even greater thickness. The shaft reaches twenty-three feet below the third level, which is 263 feet from the surface and is being sunk deeper, and crosscuts driven at intervals of eighty feet. From each of the levels tunnels will be run, crosscutting all eight veins, and thus preparing the immense bodies of ore for excavation. The ore exposed

at this writing is sufficient to supply the present plant for many years.

The mining of the ore is accomplished with the aid of dynamite. Holes are driven into the quartz by compressed air drills in series, so that when the charges are exploded the gold rock is broken and falls to the floor of the passageway, or chamber, by gravity, whence it is shoveled into the ore cars and run on steel rails to the shaft, dumped into the skip and hoisted to the surface, where it is automatically dumped into the car (skip) and hauled over the trestle to the mill, and again automatically dumped into the great reservoir ore-bin of 300 tons capacity.

The Twentieth Century Mine is carved and blasted out of the solid rock; the walls sepa-



RY MINING COMPANY PROPERTY

the three levels are shown in the centre of the drawing. Scale 100 feet to the inch

rating the quartz veins are rock so firm that supporting timber is unnecessary. The shaft itself has only necessary timber work for two compartments, one being used for ladder-way, having a landing every sixteen feet, and for the air, steam and water pipes; the other compartment is used for the skip, which is raised and lowered like an elevator in a skyscraper.

The seepage of surface water is easily kept under control by a steam pump on the second level, which is operated automatically, like the greater part of this well-planned gold-producing plant.

Day and night, winter and summer, are alike in the depths of the mine; so the work is carried on continuously. Three shifts of men working eight hours each are employed. The change of shift is marked by the smothered boom, boom, boom of the blasts that sound like the reports of great guns afar off.

Night and day the ore is raised from the bowels of the earth and delivered into the ore car, which travels over the high trestle-work and dumps its precious freight into the great ore-bin without the aid of human hands. Sixty tons of ore every twenty-four hours are needed to keep the mill running to its full capacity, but there is no lack of ore to keep a mill three or four times as large running a century or more.

THE WORKING OF A PERFECT GOLD MILL

All hours of the day and night the chunks of white rock clearly marked with the shining mineral go ringing down the steel bars of the grizzly, where the smaller pieces fall through into a chute, and slide to the intermediate bin, while the larger pieces go into the great storage bin. Opening through the lower walls of the great bin are square doors from which a steel-lined chute leads to the jaws of the ore crusher. This machine, insignificant when at rest, begets a feeling of respectful awe when, in action, its great corrugated jaws move with a munching motion and the ore is crumbled as a child powders a biscuit in its fingers. Its strength is uncanny and its appetite unappeasable.

The great ore-bin and ponderous crusher are supported upon massive timbers the size of large, full-grown trees, placed upon solid rock; the structure, while directly connected with the mill, is in itself separate, and no part of the vibration of the crusher is communicated to the other part of the mill.

From the ore crusher four chutes distribute the broken ore evenly down into the four intermediate bins, one for each battery. These bins have an incline floor which carries all the ore to the front and downward to the chutes, distributing the ore automatically

by gates hung in grooves controlled by a cog mechanism through four separate chutes into four hanging automatic ore feeders, which regulate the flow of the ore into the four mortars, constituting four batteries of five stamps each, so that the stamps are fed according to their digestive capacity.

The hanging automatic feeders supply the ore, which is about the size of anthracite furnace coal, mixed with finer particles, into the mortar which, with a stream of water, passes into the space under the giant plunger. The action of the stamps pulverizes the rock into powder, or rather into a fluid paste, which flows through a fine steel screen over silver-plated copper plates coated with mercury. These plates



SURROUNDED BY GOLD QUARTZ

The president and mine manager on the second level at the face of vein number "Three," 30 feet wide, south crosscut, Twentieth-Century mine

are about five feet wide and twelve feet long, and as the powdered ore mixed with water flows over the mercury amalgamated plates the particles of gold, being heavier than the rock or the water, sink, and gold, having an affinity for mercury, clings to the plates. The remaining material, called tailings, flows off and over the foot of the plates through troughs out of the building into a great basin constructed for that purpose. The rusty gold and that associated with pyrites in the tailings, which cannot

in the mortars and from the mortars themselves. The accumulation is placed in an iron retort, and the mercury is volatilized in a furnace for further use, while the gold is melted into bars ready for the mint.

Imagine four steel mortars of 6,000 pounds each, in each of which five steel pestles, weighing 1,050 pounds each, raising and dropping alternately about ninety times a minute. The sound of blows struck are like discharges from a squadron of battleships in action, the impact of steel against steel—cushioned only



"STOPPING OUT" GOLD ORE

The compressed air drill at work on the third level (240 feet below the surface). The light spots show the position of lighted candles

be saved with mercury, will eventually be treated by cyanide—a practical chemical process which extracts the remaining gold at small expense.

As the gold gathers in rolls or ridges upon the mercury-coated copper plates, it is removed with scrapers and placed in a steel amalgam safe, where it accumulates until a regular clean-up occurs, about once a month, at which time all the gold is removed from the amalgam tables, as well as from the plates

by intervening rock, resembles thunder of which the tropics only can boast. The impact of the blow is terrific, and the vibration, of course, is great, but the foundation of the stamp supports is carved out of the solid rock fourteen feet below the mortars, and the structure is entirely separate from that of the building; and in spite of the power and rapidity of the blows struck not a tremor is communicated to the battery floors or the building surrounding it.



WHERE THE PROCESS OF EXTRACTION BEGINS

The top of the mill, showing summit of incline railway, where the ore is dumped automatically over a grizzly (screen) into a bin of 300 tons capacity

V

SUPERIOR FACILITIES

Economic production of every product, even gold, is largely dependent on economy of labor. The work of man's hands is expensive; natural forces are infinitely cheaper. This fact was clearly borne in mind by Mr. Blum when designing the Twentieth Century mining works. He has installed modern machinery, utilized the physical advantages of the locality, and brought into use ingenious devices, acquired during many years' practical service in mining. The plant from mine to mill is a model of perfection; the entire system is as automatic and labor-saving as it possibly can be. From the time the ore is shoveled by the "mucker" into the ore-car underground, it is not touched by human hands until the gold is taken off the plates and melted into bullion. One man is on duty continually in the battery-room, to see that the plates are kept clean, that the machinery is oiled, cleaned, works smoothly, etc., and one man keeps watch above to see that there is no stoppage in the flow of ore to the crusher.

In entering the towering mill

building (it has five stories) one is struck with the airy spaciousness of its rooms. Large windows let in the clear Canadian ozone and sunlight; and the clean pine timbers, cut by the company's own sawmill from trees grown on its own wooded islands, add a grace and solidity that many a mill lacks. Rock, solid, of immense depth forms the foundation, and the blasting necessary to secure a permanent footing for the great timbers made a cut big enough to start the New York subway.

To the right of the mill stands the power plant, three boilers fitted with grates suitable for burning the omnipresent wood; a steam pump feeds water to the boiler through a heater, and a larger steam pump draws water from the creek for the mill and camp. The large steam engine is of ample power for double the present milling machinery. The air compressors that supply the drills far underground and the hoisting engines are all housed in this building under easy control of two men, who control the power for both mine and mill. Much is trusted to the strength and control of the hoisting machinery; valuable ore and still more precious lives are dependent on its



TIMBERS SUPPORTING STORAGE ORE BIN

The trees from which this timber was cut were growing on the Twentieth Century Company's property less than a year ago



THE HUNGRY JAWS OF THE ORE CRUSHER

That break the gold-bearing quartz to the proper size for the stamps
(a bird's-eye view from the top of the ore bin)



THE AUTOMATIC DISTRIBUTING CHUTES

From the ore crusher, leading down into the intermediate bin of the
Twentieth Century mill. From this bin the stamps are fed with ore

perfect reliability. Its power admits of working the mine 1,000 feet deep, and its control by the engineer in charge is absolute, a dial showing the position of each skip (car), whether in the mine or on the incline railroad above ground. An automatic brake would stop the skip (ore-car) instantly, should the steel cable (which has what seems an absurdly high factor for safety) part.

The mill is so built that its capacity can be increased by the simple addition of more buildings and more machinery, without interrupting the work in the least. The power plant and ore delivery is designedly placed so that it will be in the centre of whatever additions are made. In a word, the plant is planned not only for economical operation but for easy and rapid growth.

VI

A MINING CAMP RESEMBLES A MINIATURE CITY

A mining camp much resembles a miniature city, and like a city requires experience and

superlative judgment to manage it properly. Included in the little city (the Twentieth Century camp) the company has many log houses chinked with clay and moss. First, the hotel or boarding house, where the men are provided with comfortable berths and food ample in quantity and of a quality that would please an epicure; its business office, assay and melting office, blacksmith shop, stables, shaft house, warehouse and storehouse, cold storage house, and a small hut or dugout, well ventilated, where an even temperature is maintained for the storage of vegetables; an oil storage house and a magazine built at a safe distance from the main camp, with the manager's residence, completes the present list of buildings.

VII

THE IMPORTANCE OF GOOD NATURAL CONDITIONS

The lack of wood, water and transportation has been a serious handicap to many a



ORE-CONTROLLING GATES

That regulate the volume of ore that flows to the automatic stamp feeders



THE AUTOMATIC ORE FEEDERS

That supply the stamps with just enough ore

mine that would otherwise be immensely profitable, and in several cases enormous sums have been spent to provide these factors. The Ontario gold fields are set in the midst of a vast network of lakes of clear, good water. The Twentieth Century Company's property fronts on upper Manitou Lake, the mine being but one mile from this body of water, while a small inland lake is but a few hundred yards from the mill. Besides this wealth of water, a clear stream runs through the centre of the camp, providing pure, healthful water in abundance for every purpose. The other chief requisite, wood, is the next most plentiful natural product. The camp is surrounded by a forest from which the underbrush has been conveniently burned by forest fires, providing ample fuel for a long time to come, and numerous islands dotting upper Manitou Lake are covered with growing standing timber far beyond the reach of forest fires.

These mines may be reached from New York City by palace cars in fifty-eight hours *via* Montreal or Toronto, except about twenty-eight miles by steamboat and stage, being midway between the Atlantic and

Pacific oceans, and about seventy-five miles north of the United States boundary at Minnesota, accessible to centres of supplies of all kinds.

The natural advantages are all that could be wished. The short distance from civilization and the great army of men seeking work allows of the employment of men at low wages. The climate is not to be surpassed anywhere, as the looks of the men testify.

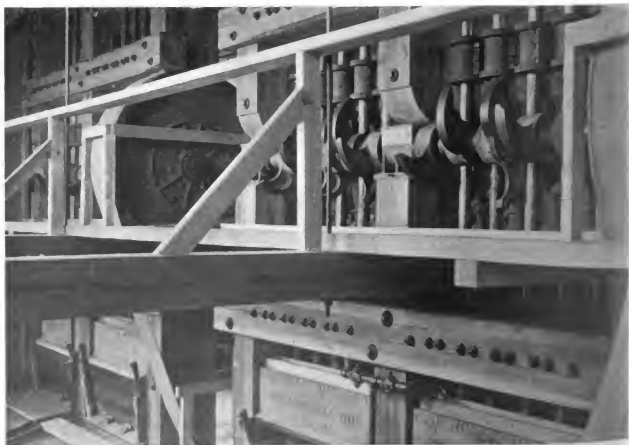
VIII

VALUE OF THE ORE

The gross value of the ore being about \$9.00 per ton, and cost of mining and extraction \$2.00 per ton, with ore deposits practically inexhaustible, would return handsome profits for several generations.

The value of ore is not the only basis for measuring profits. Large-sized ore deposits gold free from mineral combinations requiring expensive separation and other physical factors, have more to do with profit than ore values alone.

As an example, we refer to two prominent mines whose ore values are from two to four hundred per cent. lower than Twentieth



THE POUNDING STAMPS

Showing the upper part of twenty stamps that pulverize the Twentieth Century ore. With each revolution of the spur-shaped cams each of the 1050-pound plunger-like pestles are twice lifted and dropped into the mortars about 90 times per minute



GATHERING GOLD FROM THE AMALGAMATED COPPER PLATES

Where the pulverized ore, mixed with water, flows over the mercury-coated copper tables shown in front of the stamps. The gold particles in the half-liquid ground ore, being heavier than the rock atoms, sink and cling to the plates, for which they have an affinity

Century ore and which, nevertheless, are very profitable to the owners, viz., the Alaska Treadwell Company, of Alaska, whose production the past year aggregated 600,000 tons of ore of the gross value of \$1.88, with cost of mining, extraction and operating expenses, \$1.05, leaving a net profit of eighty-three cents per ton; and the Homestake Company, of South Dakota, with ore averaging \$4.50 per ton, have paid over \$10,000,000 in dividends.

The writer has performed the operation, commonly known as "panning," himself, picking up a piece of ore at random from the dump for the purpose, and has had the satisfaction of seeing a streak of shining gold at the bottom of the pan—proof positive of the presence of the precious metal in paying quantities so easily extracted that the veritable amateur accomplished it.

IX

GOOD MANAGEMENT ALL IMPORTANT

Mr. Anthony Blum, the president and manager, of German extraction, forty-seven years old, is a man of twenty-five years' wide practical mining experience in the United States, Canada and foreign gold, silver and

copper fields, a man of resource and fertile in ideas. Mr. Augustus Trudo, with whom Mr. Blum traveled all over the Ontario gold fields, is a mining engineer of forty years' experience in many different localities and is the expert on the ground, while Mr. Dryden Smith, who has grown up within hearing of the pounding stamps and has had eighteen years of practice in the various branches of mining, is the mine manager.

Leaving nothing to chance, Mr. Blum has purchased the rights for the Province of Ontario of an electrical ore detector, which is based on the well-known law that an electric current follows the line of least resistance. By noting the amount of resistance along diverging lines an ore body can be located exactly, and the distance below the surface can be determined within a few feet. An illustrated description of this great invention was published October 11, 1902, in the *Scientific American*. Copies may be obtained from Mr. Blum's company. The rights in this invention were secured in order that there might be no guesswork, that the position and size of the ore body might be known exactly before work was begun. The purchasing of the control of Brown's Geodetic Ore Finder by the president of the company is exactly in

line with the company's careful, conservative management.

X

THE GROWTH OF A GREAT INDUSTRY.

And so in the Canadian wilderness American brain and enterprise, backed by American capital, has established an industry—for an industry it is, not a speculative mining venture—that has already paid dividends two and a half years; has a future before it that bids fair to eclipse many other like properties. The mine is actually producing gold in very profitable quantities, as has been shown in the foregoing. The plant, actually running at its full capacity, has been completely paid for, so that there is no outstanding indebtedness, and the supply of ore of paying value is inexhaustible.

The Twentieth Century is not the only mine in this region: there are other operating and producing mines which are profitable to their owners.

XI

HOW TO SECURE PROFITS OF GOLD MINING

It is not necessary to be a miner or to suffer the hardships of prospectors and pioneers to participate in the profits of gold mining. Shareholders in the Twentieth Century Mining Company participate in the profits, though they are distant from the mines, and

do not have to sacrifice comfort in securing them. Money earns for them what experience, brawn and hardship does for the miner.

The ore deposits of the Twentieth Century mine are capable of supplying permanently ore to a plant of twenty-five times the present capacity, which would reduce about one-half the present cost of mining and extraction.

The company depends upon the sale of its treasury shares for increased production facilities, the net earnings of its present plant being disbursed among shareholders as dividends. In order to provide additional machinery The Twentieth Century Mining Company, Ltd., offers to the public for immediate subscription its full-paid, forever non-assessable treasury shares. The purchaser thereof not only participates in the 8 per cent. per annum dividends, paid quarterly, but will also receive increased dividends made possible by increased production.

Engineer's report, maps of the property copies of charter, title, financial statement subscription blank for shares, and further information may be had free on application to The Twentieth Century Mining Company, Ltd., 35 Court Street, Boston, Mass., or The National Trust Company of America, St. Paul Building, 220 Broadway, New York City.



THE HOISTING ENGINES

The man at the throttle is the third of the four men who do all the work in the Twentieth Century mill. The position of each ore car is definitely known by means of a dial indicator, and is under the complete control of the operator

THE WORLD'S WORK ADVERTISER



A BRANCH OF MEXICAN COFFEE TREE.

The coffee berries change color from yellow to green and finally to a rich scarlet.

THE INDUSTRIAL WEALTH OF OLD MEXICO

THE development of Mexico under the strong government of President Diaz makes one of the most important chapters in modern progress. The country has had that continued stability which is a necessary basis of industry. Instead of a round of petty revolutions there has been nearly a generation of productive enterprise.

This up-building of Mexico on broad lines is essentially the work of strong men. The personal equation, everywhere a factor, looms unusually large beyond the Rio Grande. With Diaz there have been Limantour, the Secretary of the Treasury of Mexico, General Reyes, the Minister of War, and the late Señor Don Matias Romero, for many years the Mexican Minister to the United States. To Romero belongs the distinction of being one of the first diplomats to grasp the relationship of diplomacy to commerce and industry. In the swift expansion of American trade his example has been and is of incalculable value. It set a new standard of diplomatic service.

Not only did this far-sighted Mexican statesman gather all possible information that could serve the industries of his country, but he took the initiative in actively developing Mexico's great resources. It was he who first directed the attention of prominent business men and financiers of this country toward Mexico as a rubber and coffee producing district.

They became interested in a series of experiments in coffee and rubber cultivation then being made in Mexico under Señor Romero's supervision. These experiments proved so conclusively that both coffee and rubber were susceptible of an enormously profitable cultivation that these gentlemen at once sent to Mexico an expert Mexican agriculturist, who thoroughly inspected many tracts of land in the Republic. After some months of examination and comparison, the tract known as "Ubero Plantation" was selected. The intervening years have been the history of the growth of the companies formed by these gentlemen and their associates, who are the pioneers in the cultivation of this "Garden



DRYING MEXICAN COFFEE

Spot of America." These gentlemen have developed successfully nine similar properties; the most prominent being the Ubero Plantation Company of Indianapolis, the Ubero Plantations Company and The Consolidated Ubero Plantation Company, both of Boston.

Though it is true that the energy, ingenuity and capital of this coterie of men have been largely responsible for the recent strides in agricultural and commercial activity, the native people have lent much aid, and have lost no opportunity to show their appreciation of the benefit derived from the development of their land.

I

PROGRESSIVE POLICY OF PRESIDENT DIAZ

President Diaz is a man of unusual ability and of the most progressive ideas. During his long term of office he has steadily pushed forward the improvement of commercial facilities, and the excellent railway system traversing the Isthmus of Tehuantepec, now owned and controlled by the Government, is one of the best evidences of his industrial foresight.

On this Government railway, equidistant from the Gulf of Mexico and the Pacific Ocean, in the heart of the coffee and rubber belt of the country, are the rich lands of The Consolidated Ubero Plantations Company. This corporation has brought under one man-

agement eighteen of the most successfully conducted of the plantations contiguous to the properties owned and controlled by the Ubero Company of Indianapolis and the Ubero Company of Boston, which have paid as high as twenty per cent. dividends per annum. An appraisal by several of the most experienced men in Mexico has conservatively valued the assets of the company at more than one million dollars.

The total acreage of The Consolidated Ubero Plantations Company is 6,000 acres, 1,600 acres of which have been under actual cultivation for four years. The natural conditions of soil and climate are equally well adapted to the cultivation of all tropical products. Then, too, the unrivaled facilities for transportation furnished by the Tehuantepec National Railroad, passing through the centre of this district, make it profitable to produce and export to the great markets of the world any of the tropical products to which this company may devote their attention, such as coffee, rubber, pineapples, oranges, lemons, grapefruit, cocoa, and all tropical fruits.

II

GROWTH OF THE MEXICAN COFFEE INDUSTRY

It is very interesting to note the characteristics and manner of growth of the coffee plant. It partakes of the nature of a shrub, which, in a state of cultivation, varies in

height from four to six feet. The trunk is erect and slender and covered with a whitish-brown bark, rather rough in appearance; the wood is very limber and pliable, so much so that the ends of the longest branches may be bent to the ground without breaking. The flowers are quite numerous, with projecting antlers, snowy-white and very fragrant, but of short duration, disappearing in a day or two, but rapidly followed by the fruit. The fruit is a small berry, first a yellow, then green, and, as it ripens, a rich scarlet.

The average yield of a coffee tree is from two to four pounds of merchantable coffee during its first bearing year and double the amount the second. The life of a coffee tree is from twenty to fifty years after reaching its full bearing period, maintaining itself in a vigorous state and giving the same yield during the entire time. A single acre of land produces from six hundred to eight hundred of these plants or "trees," as they are often called. The superiority of Mexico's coffee berry is shown by the comparative prices per pound paid for coffee by the American buyers: Mexico, $15\frac{3}{4}$ cents; Costa Rica, $14\frac{1}{4}$ cents; Guatemala, $14\frac{1}{2}$ cents; Venezuela, $13\frac{1}{2}$ cents; Colombia, $13\frac{3}{4}$ cents; and Brazil, $9\frac{1}{4}$ cents.

The almost total failure of the coffee plantations of Ceylon and all eastern harvests of Brazil, together with the fall in silver and the consequent reduction in the price of land and labor, have encouraged the planter in Mexico. These facts show one phase of the great indus-

trial wealth of Mexico. Though in its infancy, comparatively, the showing is remarkable.

It will thus be seen that the lands of this company, being in this most fertile district, are especially adapted for the production of varieties and grades of coffee as large in size and as rich in flavor as that produced by the most celebrated coffee countries of the world.

Another equally important and essential feature has been supplied, viz., men to take charge of the property who are thoroughly experienced in planting and caring for the trees, harvesting and curing the crops, and at the same time possessing a thorough understanding of the labor element which must be employed to do the work in order to get the largest and most satisfactory returns without causing friction or discontent.

The company has placed on the market a superior grade of coffee, known as Ubero Brand Selected Coffee, and has established agencies at various points in Oaxaca and Vera Cruz. From these points the coffee is shipped to their factory in Boston, where it is roasted, canned, and prepared for distribution to their respective bases of supply in the different cities of the United States.

III

THE UBERO PRODUCTION OF RUBBER

Mexican rubber is next in quality to Para rubber. But while not its equal in value,



NATIVES CULTIVATING COFFEE ON UBERO PLANTATION

THE WORLD'S WORK ADVERTISER

it is far more productive in quantity and responds more readily to cultivation. The methods of planting and cultivating rubber are simple in the extreme, while the gathering of the product and its preparation for market are carried on by natives without use of machinery. The rubber tree grows in a sporadic manner in the dense moist forest. Like most "soft woods," it is a rapid grower, attaining under cultivation a diameter of from twelve to sixteen inches in from six to eight years, at which age it will yield from two to three pounds per year. The annual harvest yield of the rubber tree consists of the dried milk or sap. Hence the product sought being neither the fruit nor berry, but the sap of the tree, its return is regular in quantity and uniform in quality. The uses to which rubber can be applied are constantly increasing. The manufacture of vehicles, of coating for protecting the armor plate for war-ships and for submarine cables is utilizing the whole output of the world. This, too, in the face of the demand for the many different articles used in daily life. So necessary a product is this commodity that the United States Government admits it free of duty.

The Consolidated Company has at the present time 200,000 trees which are four years old, aside from a nursery stock aggregating upward of 2,000,000 trees. Estimating that only 1,000,000 trees are brought to maturity, and that each tree yields but two pounds yearly, the revenue at the present market value—seventy cents per pound—is enormous.

The cultivation of oranges, lemons, grapefruit, pineapples, and all tropical fruits, has

been carefully followed by the planters of the Ubero district. The Consolidated Ubero Plantations Company has made the greatest progress in handling all tropical products on account of their ability to ship them readily via the Tehuantepec National Railroad.

The demand for their products is greater today than at any time in the history of the district. In addition, all fruits can be marketed by this company at least a month earlier than the products of the Pacific States, which insures for them a ready sale at high prices.

The company has the most extensive and modern plantation facilities in Mexico. Every product is completely utilized. The company has built an administration building, residences, warehouses, tin-can factory for the pineapple trade, starch mills for the manufacture of starch from the yuca plant, necessary accommodations for 2,500 laborers, and has thoroughly equipped the property with all the necessary tools and machinery to carry on the growing of the products with which it makes its principal concern.

The company has also erected a general store for the convenience of its laborers, which is the only store within a radius of twenty-five miles. It employs several thousand men the year round.

The conditions under which the work is carried on are most admirable. The fact that the management is identical with that of the aforesaid Ubero companies augurs well for the future of The Consolidated Ubero Plantations Company. Its President, Mr. Arthur W. Stedman, is the managing partner of the



A MEXICAN RUBBER TREE—TWO YEARS OLD



LOADING COFFEE AT UBERO STATION, TEHUANTEPEC NATIONAL RAILROAD

well-known firm of George A. Alden & Company, of Boston, who are the largest importers of crude rubber in the world. Its treasurer is the Honorable E. H. Nebeker, whose years of experience as one of the foremost financiers of the country, and whose honorable record as Treasurer of the United States, peculiarly fit him for his present duties. The remaining directors are conservative, representative men who realize fully the responsibilities of their offices. The company has chosen twenty-one business men to act as an Advisory Board, who take action upon questions of importance in conjunction with the above directorate.

IV

NEW CAPITAL FOR LARGER DEVELOPMENT

Realizing the need of additional working capital to carry on the work now so well under way, the company has authorized the sale of \$1,500,000 of its six per cent. Ten-Year First Mortgage Sinking Fund Gold Bonds. These bonds are issued in coupon form, with privilege of registration as to principal. The Company has executed a first mortgage to the International Trust Company of Boston (one of the oldest banking institutions of that city, with a capital of \$1,000,000 and a surplus of more than \$2,000,000) on all the assets, real and personal, now owned or to be hereafter acquired. This mortgage covers the Company's coffee plant and business in the United States, together with moneys on deposit, now \$1,000,000. The Company has arranged a financial plan which provides for

the purchase of these bonds in two ways—for cash or on the monthly payment plan. The purchaser for cash obtains a \$500 Ten-Year First Mortgage Sinking Fund Gold Bond and receives an equal amount (\$500) of common stock as a bonus. This bond draws interest at the rate of six per cent. yearly, payable semi-annually at the International Trust Company, Boston, Massachusetts, in addition to the amount earned by his bonus of stock. The purchaser also receives back his entire principal on or before ten years, and still has his investment represented by his holding of stock, which has not cost him a single cent of his own money. One thousand of these bonds are thus offered on this basis.

On the other hand, an agricultural proposition being of necessity a time one, the company offers the remaining bonds, two thousand in all, in forty-five monthly payments, so that the money may not be received faster than it is required to bring the products to maturity. In order that each purchaser may have equal security, each payment is secured by issuing to the purchaser a six per cent. Ten-Year First Mortgage Gold Note, certified by the International Trust Company as being equally secured by the mortgage without preference of one note or bond over another. These notes recite on their face that when the purchaser has \$500 worth of them he may exchange them for one \$500 bond and receive at the time of said exchange an equal bonus of stock.

In addition to the guaranteed interest of six per cent. interest on the bonds, the

Company estimates that their stock, issued in conjunction with their bonds, will earn at least three per cent. additional each year. As more development is made and more crops come into bearing each year it is fair to suppose that these earnings will increase.

V

A BROAD BASIS FOR SAFE INVESTMENT

The proposition to the public is a very simple one. You purchase of the Company one bond for each \$500. You can make this purchase for cash or at the rate of \$5.00 or more per bond per month. The Company gives you a first mortgage upon all of its assets, real and personal, to secure whatever money you invest in its bonds. These bonds are due in ten years, but as 70% of the net earnings each year are paid to the International Trust Company, Boston, Mass., for the redemption of the bonds, some bonds will be redeemed on the first day of each January. This is decided by lot, so that your bond may be redeemed on the first day of any January. With each \$500 bond which you purchase, the Company gives you \$500 of stock as a bonus, so that when your bond has been redeemed, you still have your investment in the Company represented by your bonus of stock, which has not cost you a single cent of your

own money. The stock issued as a bonus to the bond purchasers is now earning 3% and naturally participates more largely in the earnings of the Company after the bonds have been paid, because none of the profits of the Company will then be required to pay interest on the bonds. So that if no further development is made, this same stock will earn 9%. This, however, must of necessity increase as new crops come into bearing.

The proposition here offered provides for the protection of the purchaser in a thorough, effective manner. The strength of the management, the guarantee of interest the return of principal invested, and the unusual earning features combine in centering the attention of the whole country on this celebrated Ubero district. Nowhere has such evidence of great industrial prosperity been seen.

The Company makes statement of its financial plan and gives an inventory of properties owned and controlled in an illustrated booklet, which describes completely and fully the Company's methods and properties. For additional information readers of *THE WORLD'S WORK* are invited to communicate with The Consolidated Ubero Plantations Company, at its principal office, 91 State Street, Boston, Massachusetts.



CLEARING LAND FOR COFFEE PLANTING



JUNGLE RESIDENCE—VENEZUELA

WHY IS THERE TROUBLE IN SOUTH AMERICA?

BY

JACK ST. ARMONT.

DID it ever occur to you how little we know about the South American continent? Have you stopped to consider the vastness of this "better half" of ours, trailing on at the other end of the isthmus?

Recent events have concentrated public attention upon the vast section of country lying between the Caribbean Sea and the watershed of the great Amazon, containing but about 2,750,000 souls, and yet powerful enough to embroil in controversy the three greatest nations of the world. There must be some reason for this interest which has sent into the Caribbean Sea a portion of the war fleets of five nations. There certainly is a reason, and Germany, with her merchants scattered throughout Venezuela, would feel the loss of that trade keenly. Great Britain, with her money tied up in various ways in enterprises which have paid heavy dividends in times gone by, does not care particularly to have her revenues from this quarter cut off. Even little Italy would miss some revenue, Belgium considerably more; while

the United States would feel the loss of commerce most heavily. But these are not the reasons for this controversy.

The United States will soon have thousands of men digging a canal not very far from the present seat of operations, which she will control (naturally), and will be looked upon to strictly maintain the Monroe Doctrine in a country in which millions of good American dollars are invested annually—for big returns.

Germany and Great Britain are keenly alive to this contingency, and cognizant of the fact that sixty years behind the times is this South American country, and only waiting for the aggressive American, with his experience and foresight, to open up the possibilities that now lie unworked, uncared for, and not generally known. Those who do know are making the best of the knowledge, but a few men cannot take advantage of a continent full of golden opportunities.

The seaports of Venezuela are open to the world; the harbors sheltered, anchorage unexcelled; the mountains full of precious

metals; the forests, of almost priceless woods, stand in their primeval vastness; and the soil will produce two or three crops per year of any cereal or vegetable plantage. The republic offers all the advantages of the temperate zone for health and agriculture, and the still greater advantages of the torrid zone.

THE WORLD-FAMOUS AMAZONAS

The Amazon River through Brazil, its great tributaries, Rio Negro and the Casiquiare, and its connection with the Rio Orinoco, form the greatest watershed in the world, and drain an area equal in extent to the entire United States. This famous belt is the Mecca toward which the commercial world is turning. In this region grow wild and luxuriant the banana palm, the breadfruit, pineapple, rosewood, teak, mahogany, and valuable dye woods; cacao, tonka, vanilla, cinchona, and various other trees producing essentials for pharmaceutical preparations. Here grows also in its native element a tree

charge of investigations in tropical agriculture (found in the Year Book of the United States Department of Agriculture, 1901).

Men of learning and erudition have variously named this tree *syringa*, *syphonia*, *clastica*, and *Hevea Brasiliensis*—but commonly and correctly this wonderful tree is known as *rubber*.

The uses of rubber are well-nigh infinite, since the genius of Goodyear discovered a scientific treatment of the milk which gave to the world a commercial product of extraordinary value in the arts of modern civilization. In its soft vulcanized form it is used for elastics, air cushions, boots and shoes, clothing for man and horse, belting, etc. The hard vulcanized rubber, or vulcanite, is used in the manufacture of penholders, buttons, statuary, jewelry, and thousands of other articles of daily utility. Rubber as an insulator for electrical appliances has made possible the application of this wonderful power to daily and common use, and chroniclers now write of this as the "electrical age," but historians will write of the "rubber age," which this truly is. Were the Pacific cable to be manufactured this year it would require the entire visible supply of rubber in the United States today for insulation. The rubber factories of the United States use annually 60,000,000 pounds of crude material, and the imports of rubber into this country are exceeded in value and quantity by sugar and coffee alone, and no duty is imposed on its importation.

Some two hundred years ago certain wise men of India, given to research and investigation, discovered that a useful and marketable product could be made from the cream arising from the milk of the rubber tree—hence the name "India rubber" still clings.

For nearly one hundred years the Amazon-belt has furnished the finest quality of rubber produced in the world, commercially known as Para, on account of the shipments being made through the port of Para, at the mouth of the Amazon, in Brazil. Most of the rubber used in the world today still comes from equatorial South America; and the up-river forests, where the Indians gather the *hule*, are as dense today and as little known as in the time of Cortez.

PARA THE GATEWAY

Para is a rather pretty city of about 100,000 people, and a regular call port for sever-



ONE OF THE TRIBUTARIES TO THE CASIQUIARE RIVER

indigenous to the soil and zone, a tree in the cultivation of which, by transplanting, millions of dollars have been and are being expended, but so far without commercial success, if we are to believe so high an authority as Mr. O. F. Cook, botanical expert in

lines of ocean-going steamers. The public buildings are well built and picturesque. The streets are fairly wide, and are equipped with car lines, electric lights and all modern conveniences. Hotel accommodations are good, and in the markets one can purchase wares from all parts of the world, though to do so advantageously one must be a good "trader." Portuguese is the language spoken, though one can get along very nicely with the more liquid Spanish.

Leaving Para on the full tide, which rolls in from the ocean with a roar and raises the water at the wharf sixty feet, we steam away on an ocean liner of from 4,000 to 6,000 tons, passing up through the inner channel by beautifully wooded islands and into the majestic Amazon, which at this point is three miles wide. The banks are covered with tropical verdure, from the macao, with its wide, beautifully marked leaves, and the wild rice gracefully waving in the morning breeze, to the majestic rosewood, mahogany, teak, and ironwood, while the banana palm, the breadfruit and the banyan trees add their plumes and undulating foliage to the brilliant sea of green. From the trunks and branches of the larger trees cling, depend and gracefully droop delicate vines whose darker greens, beautiful flowers and berries add a lace-like tracery to the picture. Through the branches of the forest flit birds of paradise, cockatoos, parrots, and hundreds of others of beautiful plumage, while monkeys, sloths, ant-eaters and others of the animal kingdom give an air of native life and activity to the scene which is only occasionally marred by the appearance of a cobra, anaconda, crocodile or lizard.

MANAOS THE RUBBER CENTRE

After two delightful nights and two days of languid siesta upon the broad decks of our steamer, we tie up at the wharf used by the Para Company at Manaus, just as the sun rises over the gilded spires of the cathedral, bathing this picturesque half-Spanish, half-Portuguese city in a flood of light. The most prominent feature of this city of 60,000 people is the shipment of rubber, just as the shipment of tobacco is the prominent feature of Havana. All the exporting section of the city is occupied by packing houses, where the rubber is boxed for shipment. The well-paved streets are given over to stores of

varied merchandise collected from the marts of the world. Electric cars, arc lights, telephones and all the comforts of home abound under most intelligent management. The streets are wide and lined with tropical trees, and, with their little tables for refreshment, remind one somewhat of Paris.



PADRES MISSION

In this city, in magnificent style, live the owners of many of the rubber properties in the Amazonas, and officials representing companies that have capitals of millions, who manage their rubber enterprises after modern business methods. Here also reside merchants who have grown rich in the handling of the commodities and merchandise used by the "men in the woods." Since the almost complete and ruthless devastation of the rubber forests below Manaus the traders have moved from Para and created in Manaus today the rubber centre of the world. From this port, last year, was shipped fifty million dollars' worth of the crude product.

The social life is divided into three distinct castes or classes—the high, middle and low class, from the latter two of which it is impossible to rise after once being established. Theatres, churches, beautiful drives, and yachting on the river, together with varied social functions, afford ample amuse-

ment and relaxation in this languid environment. From 11 A. M. to 3 P. M. the stores are closed, the streets being practically deserted during these hours of siesta.

UP THE RIO NEGRO

Taking one of the small steamers of the Para Rubber Plantation Company at 9.30 P. M., we leave the glittering lights of the city behind, sail out on the Amazon, and so on into the Rio Negro, where the banks are closer together, the over-hanging trees occasionally almost shutting out the moon-

cocoa silk. Early in the morning we take the launch for a trip up the Rio Casiquiare, a winding river running for 175 miles through an open jungle of tropical trees; all the valuable woods seen on the Amazon and more acres and miles of them, for the company owns 1,000,000 acres, or 1,400 square miles of territory running the entire length of the Casiquiare River, from the Rio Orinoco to the Rio Negro, passing the mouths of thirty-six creeks which drain the country into this river. The most noticeable tree in this jungle, however, is the thick, dark-green-leaved *rubber*, whose rich foliage is seen on



NATIVE HUTS

light. From this point the scenery is too wildly interesting and tropical for description—most beautiful, enchanting.

THE RIO CASIQUIARE

Arriving at San Carlos, the head trading station of the Para Rubber Plantation Company, a town mainly controlled by this great company, situated at the mouth of the Rio Casiquiare where it empties into the Rio Negro, we find a typical jungle trading station—the streets irregular; the houses built mainly of bamboo, thatched and walled with palm leaves. We are royally entertained by Mr. Kenneth Rose, the general manager for the company, and sleep the sleep of the just upon a bed of matting and

every hand, and we are told that a careful cruising of the property has figured six trees to the acre, or 6,000,000 rubber trees over fifteen years old, besides countless numbers of younger plants rapidly growing to maturity. The tree grows in families, somewhat like the famed banyan tree; the roots of the parent trunk sprout and grow independent trunks, while the branches send creepers downward to, in turn, take root. Station No. 3, at the confluence of the Danano Creek, is reached about noontime, and after a lunch of tinned delicacies and native wine, made from a species of the palm, we take to the "tracks," as the paths or routes followed by the sap gatherers on their daily rounds—carefully mapped out for them by the foreman of the station each season—are called. These tracks

oftentimes extend to the confines of the company's property, five miles on one side and three miles on the other side of the river throughout its entire length.

IN THE "TRACKS"

The natives of this tract are Indians—peaceable, quiet and semi-industrious, docile, and capable of being easily managed by one understanding their temperament. They are formed into squads of twenty to fifty men and women, each bearing six to ten metal bowls holding about a pint, and a "carrina," or earthen jug, of a capacity of perhaps two gallons. The overseer marches his band into one of the "tracks," dropping a gatherer here and there, with instructions to take from five to ten bowls of milk from such a tree. It is a fact known to science that if a rubber tree is not abused it will produce milk in abundance for thirty or forty years—all the trees of this company are scrupulously cared for. With a machette having a blade about two inches wide a small gash is made through the outer bark, beneath which is pinned a bowl, into which the clear, milky sap soon begins to drip. This process is continued until all the bowls are in commission. Lighting a cigarette, the native then sits or lies in a soft spot for two or three hours, then commences the collection of his day's output by going from tree to tree, emptying his little bowls into his carrina, and when all are attended to the march for home is begun, joined on the way by his companions of the morning.

The contents of the carrina is then emptied into a sort of vat, and soon cream rises to the top like cream on milk, forming a thick grayish-white scum. A fire is built beside the vat; on a paddle is collected a little of the cream, which is held over the fire and turned over and over constantly until the moisture evaporates and the mass hardens, when the process is repeated until a ball about the size of a small ham is formed, weighing perhaps twenty pounds. This is known in commerce as a "ham," and in such shape, cured in this manner, free from sticks, stones and other foreign matter, it is ready for the weigher, who credits up its weight to the gatherer or immediately pays for it—so many yards of bright calico, so much rice, coffee, sugar, maize, so so many beads,

small mirrors or other showy trinkets, or tobacco, which comprise the only mediums of barter in this primitive paradise. The cost of rubber to the company is figured at about thirty-five cents per pound packed for shipment, and sells in New York for eighty-eight cents per pound.

AN ELASTIC SOLUTION

This vast tract of the most valuable rubber producing land in the world has been bought and is owned and held in fee simple, without bond or debt, by the Para Rubber Plantation Company, a United States corporation. They have organized and are operating the property on the lines adopted and carried out, through long years of successful effort, by the well-known Hudson Bay Company in the gathering of furs, and by John Jacob Astor, the founder of the Astor fortune.

A head station has been established at San Carlos, commanding the mouth of their river, so that it is an impossibility for goods to be taken in or rubber smuggled out without the knowledge of the factor in charge. Up the river, at convenient points, are located other stations, each under a competent manager or overseer, where are carried all the merchandise used or needed by the hunters, and where is collected the result of their labors, to be stored until called for by one of the company's steamers for shipment to the main packing station. This is, beyond all doubt, one of the world's greatest enterprises, giving promise of large returns upon the money expended, with great possibilities for future developments along the most diversified lines; but were rubber alone the only source of income, the profits would be enormous.

As already stated, the company owns about 6,000,000 wild trees—not a nursery for transplanted stock, which has never proved a success. Each tree produces about five pounds of rubber, which would make for the entire property 30,000,000 pounds a year—all of which facts convey some idea of the future for all who are interested in rubber, and especially so when that interest comes through a company whose plans are on lines similar to those of the great companies above mentioned.

For markets, even if the demand of American manufacturers should be entirely sup-

plied at a given time, the manufacturers of Europe would at once outbid each other to secure the raw material. And as for the profits on rubber made through European channels, there is no better known instance of a fortune made than that accumulated by the King of the Belgians through his ownership of rubber forests in his Congo region in Africa.

With the foregoing outline of what the rubber industry is, and what relation the Para Rubber Plantation Company bears to the rubber industry, it is the purpose of this article to inform the readers of *THE WORLD'S WORK* that a fortune has been spent in preliminary operations by the company. This money has been expended acquiring the property and in the establishment of camps and trading posts, and it is now the purpose of the company to sell a limited amount of its treasury stock for further exploitation.

The Para Rubber Plantation Company has an authorized capital of \$5,000,000, divided into 500,000 shares of common stock of a value of \$10 per share. There is but one kind of stock, and no bond issue; the officers are all well-known financiers and men of affairs, who have made a signal success in their own enterprises, outside of which their names

have rarely appeared, which guarantee honorable, energetic management, and a financial interest with this class of men affords an opportunity seldom offered to the public.

The stock will be sold at its par value of \$10 a share, and there are no bonds or preferred stock. In view of the foregoing, the officers of the company feel that they are very conservative in assuring investors that present prospects warrant their looking forward to a dividend of six per cent. from the first year's earnings, and it will be seen at a glance that the natural and available resources of the company are such that this dividend will be immediately and largely increased.

We desire to emphasize that the above calculation of a six per cent. dividend is based on the employment of but 2,000 laborers, and this company owns sufficient territory to give employment to the 40,000 who are available. It is unnecessary to say more. The great immediate and prospective value of the stock is apparent at a glance.

For further particulars and illustrated booklet, giving full information relative to the company, call on or address Para Rubber Plantation Company, Department E., 52 Broadway, New York City. Canadian office, 64 Canada Life, Montreal.



A STATION ON THE CASIQUIARE—YOUNG GATHERERS OF RUBBER



EMPEROR WILLIAM'S ORCHESTRELLE
In the saloon of the Imperial yacht *Hohenzollern*

ORCHESTRAL MUSIC IN THE HOME

A GREAT MUSICAL AND MECHANICAL ACHIEVEMENT—
A NEW INSTRUMENT WHICH ADMITS OF FULL ORCHESTRAL SCORES BEING PLAYED BY ONE PERSON IN THE HOME WITHOUT SPECIAL MUSICAL TRAINING

"The Present is the sum total of the whole Past."

FIRST comes the need and then the satisfaction—no great invention appears until there is a reason for its existence. The people who lived a century ago could not have used the appliances that are necessary for this day and generation. Moreover, no great achievement in any branch of human endeavor is complete and entirely separate from any other—all success is the result of growth; each great invention is the crown of a series of lesser ones.

Out of the universal need of good music in the home available at any time has grown a great invention that, though built on earlier successes, is the crowning achievement.

The Orchestrelle is a great achievement—

the pinnacle of modern inventive skill and artistic feeling.

The production of music by the slow, painstaking copy-book method of "practice makes perfect" has gone by for all time. Results must be arrived at more rapidly. But nevertheless the need of music is felt more strongly than ever before; the love of it and the desire to produce it is evident. The musical temperament, a clear understanding of the meanings of harmony, and a strong appreciation of its joys is very common in the present generation. But of the drudgery of the technical training they will have none.

Out of this need for a music-producing instrument that will enable the player to

THE WORLD'S WORK ADVERTISER



THE ORCHESTRELLE

Showing the row of stops by which the tone of the various instruments are brought into action producing the orchestral effect

interpret music intelligently and yet permit him to leave the mechanical, technical work of striking the notes of a keyed instrument to mechanism, have grown the Aeolian, the Pianola and Orchestrelle.

It has been acknowledged by the best authorities that the mechanical part of music production can be safely left, as it logically should be, to mechanism which can be made so sensitive as to perform its tasks quite as well as trained human fingers, while the mind of the player is left free to interpret the spirit of the composition.

The Orchestrelle is the one instrument that combines in the highest degree all the qualities that enable the player to produce orchestral music in the home. This splendid instrument has all the mechanical excellence of the Aeolian and Pianola, with the added advantage of beauty of tone all its own that fairly rivals even the pipe organ itself and admits of almost infinite orchestral effects.

The Orchestrelle is provided with all the stops necessary to produce any solo or ensemble orchestral result; and by means of the familiar perforated paper roll the mechanical part of the music production is accomplished. The organ is particularly well adapted to the production of its tones by mechanical

means since the sounds are produced by the simple opening of valves. In addition, the hand manual allows the practised performer to play with the fingers.

It is the one instrument by which orchestral music may be played in the home by any one whether versed in the science of music or not. Even those who have no ear for music, but enjoy it nevertheless, can, by following the expression marks and instructions on the perforated paper music roll, produce it with considerable feeling. To those who have the musical sympathy, the musical feeling, the Orchestrelle is a delight, the most beautiful effects of many of the instruments played in a full orchestra being at the command of the player. The true feeling of the composer can be interpreted in the home with less effort than is required to walk across the room.

Often the music lover is never quite satisfied with the interpretation of a favorite work; to such an one the Orchestrelle opens as it were a new Heaven and a new Earth since any desired effect can be produced after a little practice, and new meanings can be discovered in an old favorite that were unsuspected before.

So much for the layman's point, but how have these instruments been received by the musical authorities? Their ideas can best be obtained from their own expressions. As Paderewski expresses himself: "The Orchestrelle combines all the effects which can be produced by the most skilful manipulation of a grand organ with those of an orchestra. The execution of even the most complicated passages leaves nothing to be desired; and what adds most to the instrument's value is the magnificent repertoire which, with great care and a perfect taste you have prepared for it." Massenet says: "To give to a musical work an absolute and



THE LATE QUEEN VICTORIA'S ORCHESTRELLE

THE WORLD'S WORK ADVERTISER

exact interpretation; to make clear the composer's most intimate thoughts; to bring into play a wealth of execution which only the orchestra can give—in a word, to translate all the shades of coloring intended



ABOARD MR. DREXEL'S *VARUNA*

This is the instrument that induced Emperor William to order his Orchestrelle

by the composer—this is the achievement of the Orchestrelle." And De Pachmann adds: "Your new and wonderful musical instrument, the Orchestrelle, is well entitled not alone to excite the surprise, but to claim the attention and admiration of every one interested in music, the professional as well as the layman." These indorsements serve to illustrate the esteem in which the Orchestrelle is held by the masters, whose criticism cannot be questioned.

The player of an Orchestrelle is like the

conductor of a full, well-trained orchestra. The leader has but to wave his arms in one direction and his attentive musicians increase the volume or change the time; or else some one group of instruments is brought out more clearly, while the rest accompany them. Through the training of those who play the instruments the man who wields the baton can bring out any effect he desires. Just so the player of the Orchestrelle, without any musical training, can, by the manipulation of the little handles of the stops, make prominent the effect of the stringed instruments or the French horn, while his feet do the actual work (a task that is so light that it becomes absolutely mechanical and is forgotten). The sound of the clear, sweet flute can be reproduced to the accompaniment of the soft bass notes of the lower organ as easily as the nod of the conductor's head brings that instrument into prominence in the orchestra. Violins, Eolian harps, French horns, flutes, clarionets, piccolos, oboes, trumpets, can be made to play softly or with a crash of harmony by the owner of an Orchestrelle, with little study and practically no effort.

If a music lover should spend an entire year going from concert to concert and between times playing the largest repertory a musician ever had (and, O how weary he would become), he could not begin to hear the complete works of even one great composer like Beethoven or Wagner, and more



THE POPE LISTENING TO HIS ORCHESTRELLE

THE WORLD'S WORK ADVERTISER

than likely he would not be able to listen to some special composition that he longed for.

The Orchestrelle enables its owner to hear practically any music he wishes, grave or gay, an opera or a ballad, a two-step or the great *Nibelungen Ring* of Wagner, and, moreover, he can produce it with power, with real musical feeling. It is hard to realize that in the perforated paper rolls is stored practically all the works of the old masters in full—200 compositions of Beethoven, nearly as many more of Wagner, Bach, Hadyn, Handel, Mozart, Strauss—practically all the composers are either complete or are represented by the best known works, modern comic operas and the catchy tunes of the day not excluded.

All these compositions are as easily heard by the owner of an Orchestrelle as a book may be obtained from a library, from the private shelves in his own house or from a circulating library service. A collection of 4,170 pieces is at his disposal.

The power to produce orchestral music in the home may be called the active quality of the Orchestrelle, and its extraordinary beauty and power is apt to make one lose sight of what may be called its passive quality—as a means to an end. The Orchestrelle introduces its owner to much fine old music that would otherwise rarely be heard—a great deal that would probably never reach his ears, and in addition brings to his home all the new music of any importance, frequently earlier than the first-night concert, theatre and opera-goers can listen to it.

It is surprising that the effect of an Orches-

trrelle on those who are able to play the piano or organ, children and adults alike, is stimulating, and creates the desire to produce the music with their own fingers. Moreover the love of good music grows with the hearing of it and a decided musical taste often develops where it was least suspected.

The Orchestrelle is in effect a complete set of orchestral instruments of beautiful quality, packed in one handsome case that can be made to harmonize with the color scheme of any room, the music of which is produced

without effort (the hand manual may be used) but is under the perfect control of the performer. In addition, the possession of an Orchestrelle admits the owner to a broader field of music than can be entered by any other means. The compositions of the great masters and even the ephemeral pieces that are popular a day and then forgotten, are included; any of these can be bought outright for a small price, or a circulating library service by which a bimonthly

selection from 5,000 pieces is at the subscriber's command.

Those who are interested in the Orchestrelle will be glad to learn that these instruments are now built in styles and at prices which make them available to any one. Price range from \$600 to \$2,500.

The instrument will be gladly shown to any one at Aeolian Hall, the Company building, Fifth Avenue and Thirty-fourth Street, New York, or at any of the numerous agencies in other cities.



THE ENTRANCE TO AEOLIAN HALL, THE HOME OF THE ORCHESTRELLE



EMBLEMS OF PURITY

Purity, sweetness, refreshing and delightful cleanliness
are the sensations produced by the use of

PACKER'S TAR SOAP

Pure as the Pines

THE PACKER MANUFACTURING COMPANY. — NEW YORK CITY.

Over a Million Barrels a Year

Schlitz

Those are sales of Schlitz Beer making it the leader of all Milwaukee beers, by far.

That's a result of maintaining absolute purity. We doubled the necessary cost of our brewing to have Schlitz Beer right.

The Result Is

A Million Barrels a Year

We have used the best materials—the finest barley—paid as high as twice what we need pay for hops. We bored six wells to rock to get pure water. We kept our brewing as clean as your cooking.

The Result Is

A Million Barrels a Year

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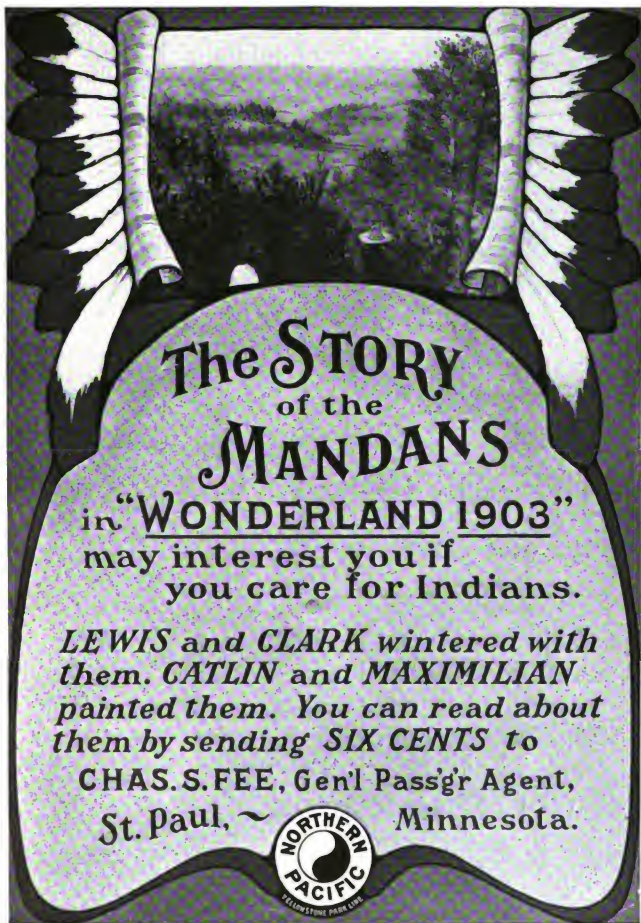
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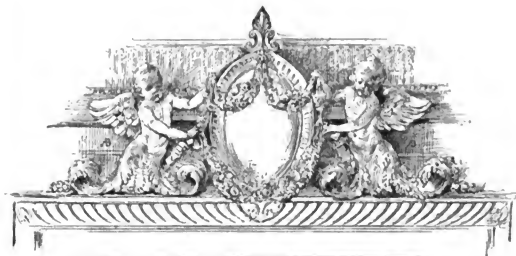
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The April CENTURY will be further embellished by a charming story of Washington life entitled "Valjean," strikingly illustrated by Miss Charlotte Harding, whose pictures of Washington scenes and characters will be remembered by readers of the magazine.

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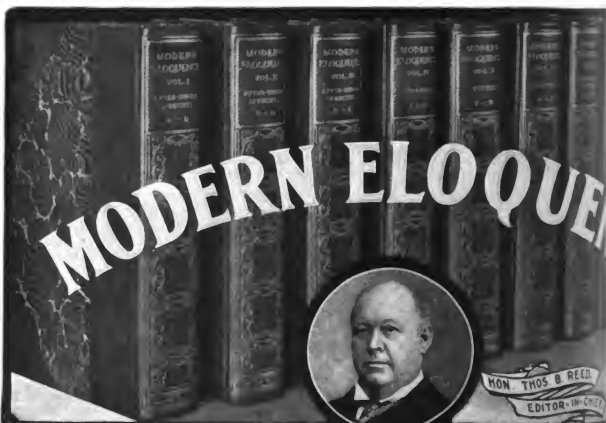
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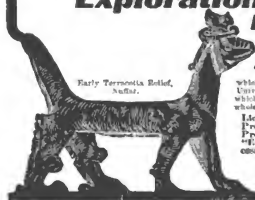
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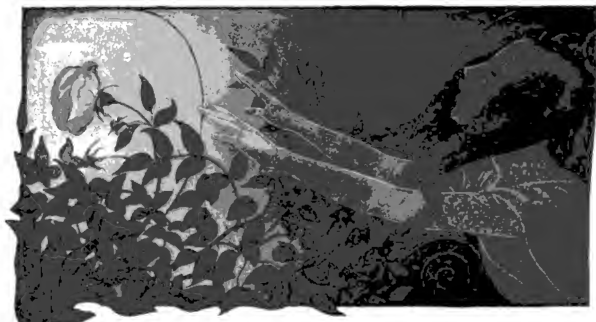
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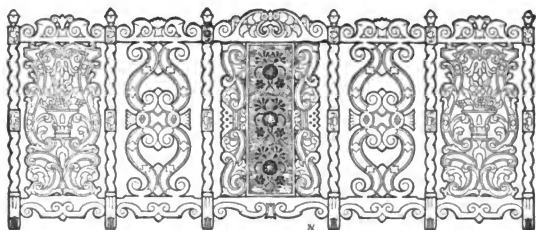
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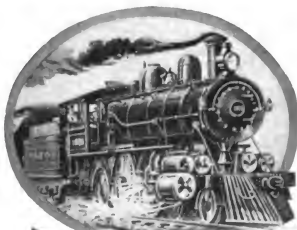
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wind themselves, save work and worry and cost no more. After 400 years of practically no improvements in the principles of time-keeping they have come as the modern way.

"Keyless" Clocks are the acme of scientific simplicity, requiring absolutely no care in winding, practically none in regulating. They are especially adapted for offices, banks, factories, railways, schools, and public buildings, any purpose where correct, dependable time is essential.

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Design for offices and libraries, 35 inches by 16, finished in Gold-n Oak or Mahogany and equipped with the "Keyless" self winding movement. \$25.75, C.O.D. if desired.

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 TABLE WARE,
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 It is better in wear and equal in
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Enamelled Ware

will make your bathroom a constant pride and comfort and assure you of perfect sanitation.

This shows a modern bathroom equipped with "Standard" ware costing \$90.00. We will send our book

"Modern Bathrooms"

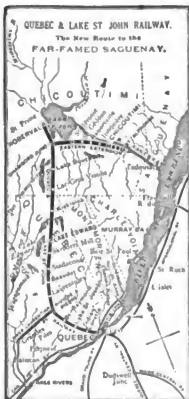
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"Modern Bathrooms" shows you in every detail how to improve or equip your bathroom, and illustrates many beautiful equipments, both simple and elaborate, with prices.

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Apply to the Ticket Agents of all Principal Cities.
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comes every day in the year to him who still employs old and expensive ways of getting water. Methods have changed since old colonial times with the "Well Sweep." Look around your place and see how much time you or your servants spend daily, in conveying water by hand, for the laundry, the live stock, the garden, and every household use. The cheapest man you can hire will cost you, in two or three months, more than a

Hot-Air Pump,

which lasts a lifetime, and does the work of many servants, far better, too, than they can ever do it. It gives you water in abundance and also insures you against fire. It is the greatest labor saver that any household can employ, and supplies more comforts than any appliance obtainable.

Remember, the Hot-Air Pump is the cheapest form of constant water supply now known. A permanent investment, which will outlast a generation of users, can now be bought for \$100. Descriptive Catalogue C1 sent free on application.

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The Hot-Air Pump.

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110 MILES OF STEEL TOWERS



The largest order ever placed for steel towers has just been executed by the Aermotor Company, Chicago. The order was for 1200 steel towers to support large electric cables. These towers are to be erected in the interior of Mexico, to carry electricity from an immense water power plant up to the mines, over 100 miles distant. The order for these towers came to the Aermotor Company unsolicited. The reputation of the Aermotor Company for building the best steel towers, for windmill and other purposes, brought them this unusual order. When the engineering and mining experts, who were placing the contract, were making up their specifications for these towers, they found no place in the construction of the Aermotor tower where they could suggest improvement. The sizes of some of the parts were changed to meet their particular needs, but the design of the towers remained precisely the same as the Aermotor Company perfected it years ago.

It was of very great importance to the company buying these towers to secure the greatest possible strength with the least material. These towers were to be placed about 500 feet apart. The weight of the long span of cables would be a very heavy load, to say nothing of the enormous side strain which might come upon the towers. Then, too, the contingency of one or more of the cables breaking, and throwing unequal strain upon different parts of the towers, had to be considered. The Aermotor Company guaranteed these towers to stand until the 3-inch, extra strong wrought iron pipe in the top should bend over. They stood this very severe test without the least indication of buckling in any part of the tower.

The item of freight was another important consideration. These towers, as built by the Aermotor Company, made over 75 carloads. No other concern could have furnished towers of anything like the same strength with less than 100 cars of material.

The Aermotor Company has a very great advantage over all others in the manufacture of steel towers. It was the first in the field, and had all the most vital features fully covered by patents before competitors were through laughing at the idea of a steel tower. The Aermotor tower was designed by mechanical experts who knew what points were essential to secure the greatest strength with the least material.



Testing the Towers.

The strain directly upon the corner posts where it belongs. The braces and girts have nothing to do but hold the corners in line. Because other makers are not able to adopt this feature, they are compelled to use a large amount of extra material in their towers, and even then their towers are not so strong. Weight often indicates weakness rather than strength. All the weight not needed serves only to bring additional strain upon the parts which must bear it.

The best steel tower, like the best bicycle, is the one which secures the greatest strength with the least possible material. The Aermotor tower is strong, safe and durable. Every pound of steel which is put into it is used to the best advantage. A tower twice as heavy, but poorly constructed, would be weaker.

The tower is a very important consideration in buying a windmill outfit. If the tower goes down, the best windmill will be worthless.



WRITE FOR OUR WINDMILL BOOK

We have a book that tells all about windmills. It begins with the Dutch windmills of 1400 and ends with the Aermotor of 1903. It contains 125 pictures to show you what windmills should do and what they should be. It tells all that invention has done for them. When you read this book you will know all that anyone knows about windmills. You will know the right kind from the wrong kind and know all the differences. To avoid a mistake don't buy without reading it. The book is free. Simply write for it.

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"THE SHIELD TO HEALTH."

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Linen Underwear

Grateful to the skin, enables it to respond quickly to all weather changes, and perform its work normally, as nature meant it to.

Cut and fit are perfect. Wear and durability guaranteed.

Physicians recommend it, and wear it themselves.

Send for samples of the fabric and our handsome and convincing book—mailed free on request.

For sale by the best dealers in the United States. If your dealer cannot supply you, we will.

THE BELFAST MESH UNDERWEAR CO.,
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BEST & CO

LILIPUTIAN BAZAAR
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Girls' Russian Dress

Fine white pique, box pleated back and front, trimmed with white pearl buttons; ages 4 to 13.

\$6 to \$9

According to size

Our Spring and Summer

Catalogue

(sent for 4 cents postage) describes over 2,000 articles—more than 1,000 of which are handsomely illustrated—for the Complete Outfitting of

Boys, Girls and Infants

We have no branch stores—no agents

Correspondence receives prompt attention.

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60-62 WEST 23d ST.,

NEW YORK



IVERNIA
2 in.

The Man in the Collar Sets the Style
because he is always seen in the HELMET BRAND collar.

"Ivernias," shown above, is an ideal Spring collar, stylish in shape and very comfortable. Wide stitching. **Price 2 for \$3.00.** Sold by leading dealers. If unable to procure them we will supply you.

Our handsome booklet shows HELMET BRAND collars of every style—no matter what your special requirement. Also authoritative information on correct details of dress for every occasion. Free for your dealer's name.

80 Broadway, Troy, N. Y.

CORLISS COON & CO.

In writing to advertisers please mention THE WORLD'S WORK.

Shawknit Cotton Half-Hose for Men are Made from

EGYPTIAN COTTON

is imported direct to us in *original bales*, and then made into yarn under our own supervision, in *our own yarn mill*. Egyptian Cotton is silky in appearance—soft and very durable,—reasons why we use it, and *one* of several reasons why our products *wear longer, look better*, and retain their brilliancy of color.

Our dyes are non-poisonous, and we guarantee our products will neither stain, fade, nor crock.

Shawknit
TRADE MARK

We are pleased to show a New, Neat Effect, suggestive of style and comfort. Style H-2—Cambridge Black and White Mixed Ground with Cardinal Hair Line Stripes. H-1—same effect with white stripe. Sizes, 9-11½ inclusive. 25 cents per pair; ½ doz. pairs, \$1.50. Post or Express Paid in U. S.

Styles H-1 and H-2

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Dealers
Everywhere**

Our Catalogue
Illustrated in
Colors
FREE



Shaw Stocking Co., 15 Smith St., Lowell, Mass.

Dr. Deimel (LINEN-MESH) Underwear

This underwear is snow-white, clean and beautiful. You can wash it in any way, with the assurance that it will emerge from the laundry fresh, clean, and the same size as the day you first put it on.

Booklet, telling all about it, and samples of linen-mesh mailed free on request.

THE DEIMEL LINEN-MESH CO.

(Originators of Linen-Mesh)

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It Holds
the Hose
Neatly.
Comfortably.
Securely.

Clasps lie
FLAT
against the
leg.
No chafing.
No friction.

BRIGHTON Silk Garter FOR MEN

See that the word Brighton is on the clasps and on the box. If not, a pair at all dealers, or by mail.

PIONEER SUSPENDER CO. 718 Market St. Phila.
Makers of Pioneer Suspenders.

MENNEN'S



DELICIOUS AFTER BATHING, A LUXURY AFTER SHAVING
Beautifies and Preserves the Complexion.

A positive relief for PRICKLY HEAT, CHAFING and FUNGUS, and all afflictions of the skin. For a sore, blistered and pricking foot it has no equal. Removes all odor of perspiration. Ask MENNEN'S (the original), a little higher in price, perhaps, than worthless substitutes, but there is a reason for it. Build every where, or mailed for 25 cents. Avoid such cheap, inferior, cheap. (Chicago Free).

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New

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Something
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Correct Wedding Invitations

Announcements, visiting cards and social stationery direct from the makers at one-price prices.

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Simply send us your name on a postal and we will send you a 24-page book of correct wedding forms, lithographed from original steel engravings on fine paper. Shows over 100 forms. Write for it to-day.

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Guaranteed "All trouble made good"
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NEXT TO SANDALS



SHOES of "Valvic Calfskin"—the coolest, cleanest, and most ventilating of leathers.

Pores of the hide left *open*, in tanning, to carry off perspiration of the foot, as Nature designed them to carry off perspiration of the Calf.

Sweat-dispelling as Buckskin, while water-proof as Cravenette, brilliant as silk, and tough as rawhide.

"Valvic Calf" is the *only* leather, which *proves porosity*, by the infallible gas test shown in the picture, and now in operation at every Regal store.

Regals have "Custom made" style and *prove, before purchase*, that they have the genuine *Oak leather* soles of \$6.00 shoes.

This proof consists in a removable seal on the bottom which *uncovers* the leather under the finish.

Through 16 Regal stores in New York City, and 46 in U.S. and Great Britain, —at \$3.50.—By mail, carriage prepaid in Postal Union, at \$3.75.

Sample of "Valvic Calf," with descriptive book, and Spring catalogue, on postal card request.

Style No. 8412

Blucher Oxford
in Enamel Calf.

Laced in
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THE REGAL SHOE CO., MAIL ORDER ADDRESS
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WILLIAMS' SHAVING SOAP

"DON'T FOOL WITH YOUR FACE"

A correspondent says:
 "I recently tried another kind of shaving soap. At first I didn't notice so much difference, except a 'dry, uncomfortable feeling' after shaving, but at the end of a week, my face was so sore that shaving was painful. I am glad enough to get back to the creamy, comforting lather of Williams' Shaving Soap. Now my face is O. K. again."

Sold in the form of Shaving Stick, Shaving Tablets and Shaving Cream throughout the world.
THE J. B. WILLIAMS CO., Glastonbury, Conn., U. S. A.



H&R REVOLVERS

are noted for their absolute safety, accuracy and durability. Avoid inferior substitutes.

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Circulars, Newspaper Press, 85. Larger size, \$1. Money saver. Big profits printing for others. Type-setting easy, rules sent. Write for catalog, presses, type, paper, &c., to factory.
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PECULIARLY adapted to **INDIVIDUAL USE**—because it does your work easily, quietly and without causing delay. Prints from the face of beautiful type in permanent and perfect alignment, and the learning is agreeable and interesting.
IT DOESN'T WEAR OUT OF ORDER!
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All the standard machines for sale or rent at the manufacturers' prices. Each machine fully guaranteed. Ship or privilege of examination. Write for catalogue.
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Not the brown-sugar-and-water of commerce, but genuine article made from the spring sap of the Vermont sugar maple. We make it on our Vermont farms, where our family has been making pure maple syrup for our grandfathers' time until now. Not only do we make it ourselves, but we sell it ourselves, thus avoiding adulterations and commissions of middlemen. We are now booking orders for this Spring's run. Put up one-gallon cans. Send \$6.25 for five gallons. We pay freight. Reference: **COUNTRY LIFE IN AMERICA**.

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By a New York Business Man on Raised Checks.

Our booklet, "Ten Plans on the Money," is full of things you ought to know about check raising and check promotion. A postal card brings it—only sent once for 10 to-day—this minute!

indelibly and unalterably. This is the machine used by the U. S. Government and by 10,000 bankers and others to protect their checks.

C. W. TODD & COMPANY, Manufacturers, 2 Exchange Street, ROCHESTER, N. Y.

Is YOUR Bank Account Safe?

Not unless your checks are stamped by the PROTECTOGRAPH, which impresses lines like this

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The name of
MACBETH is on
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If you'll send your address, I'll send you the Index
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MACBETH, Pittsburgh.

All over the civilized world
THE IMPROVED
BOSTON
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IS KNOWN AND WORN
Every Pair Warranted

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The *Velvet Grip*
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Lies flat to the leg—never
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50c. for Silk,
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Brushes Talk
Use a Scrubbing brush for a
time ordinary way with Soap—
Use another just like
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Your strength did
the work — Your
paint and brush
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Pearline The best form
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Recognized by all physicians
as the standard antiseptic for
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tion; to relieve colds; as an
aid in whooping cough, influ-
enza, scarlet fever, diphtheria, etc.;
to cleanse wounds; for personal
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One pound of Schering's Formalin (at druggists, 75 cents),
diluted with water as per directions on bottle, makes 40 lbs.
of antiseptic solution. Hence, besides being far more powerful
and harmless, it is cheaper than any other disinfectant.

The Chicago Board of Health says (Bulletin Oct. 25, 1907):
"At the onset of symptoms of having caught cold, remove
cover of a box containing cotton soaked with Formalin, and
inhale through mouth and nose alternately for 2 or 3 minutes, not
too vigorously at first, and repeated as often as necessary. It is
confidently believed that thousands of cases of contagious
diseases, with a large percentage of deaths, could be prevented
by this simple and inexpensive method."

Formalin is most effectively and con-
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**SCHERING'S
FORMALIN LAMP**

At all druggists, with 2 boxes Pastils, at \$1.75.

CAUTION.—Every good article has poor imitations. Insist
on bottle bearing label of

SCHERING & GLATZ, Sole Agents, New York
Send Now for Interesting Booklet.

The Wanamaker Store

White Shirt-Waists You'll Want to Wear

Fashion says "white, white, white," with convincing persistence, in talking about styles for Spring. The rage for white shows in everything—millinery, dress-materials, neckwear—and particularly in the shirt-waists that women will wear this season.

So we've gathered a bigger, handsomer, more varied collection of White Shirt-Waists than ever before. The people who make the fabrics have done their share toward making the shirt-waists beautiful—the goods glisten and sparkle with effective mercerized designs, for one thing. And many new materials are pressed into service—the collection runs from the lightest lawn and silk mull to the heaviest of butcher's linen, cheviot or linen canvas, for tailored waists. Laces play their part, lavishly and to good effect. Antique lace is the newest feature, and there are Teneriffe medallions, Mexican drawn-work insertions, and so on, in endless variety.

You can't tabulate a hundred and sixty odd styles, but here are a few hints of prices and what they'll buy:—

- At \$1.75**—Madras or Cheviot; figured or striped; plaited, box-plaited or full fronts; plaited or French back.
- At \$2.50**—Butcher's Linen, basket-weave Cheviot or striped Madras; plaited, slot seam effect; or plaited, with straps on shoulder extended to form shield in front.
- At \$3.00**—Figured Silk Madras; plaited; straps, forming yoke.
- At \$3.75**—Linen, striped Madras, figured Cheviot; finely plaited; plaited, with stitched straps; or yoke.
- At \$4.50**—Figured or lace-striped Silk Madras; front with cluster plaits or finely plaited, forming yoke; pointed stock or soft tie.
- At \$5.50**—Lawn, finely plaited; yoke with faggoting; medallions or finely embroidered yoke.
- At \$6.50**—Linen, embroidered or with Mexican drawn-work.
- At \$6.75**—Embroidered Butcher's Linen, or Silk Mull; cluster-plaited; lace insertions. Teneriffe medallions, or inlaid vests.

JOHN WANAMAKER

NEW YORK

The Wanamaker Store

New Wash Cottons For Your Summer Frocks

For months the mills have been getting ready, and now their best efforts are seen in the way these shelves are piled high with the dainty cotton fabrics for the Spring and Summer.

There's been a reversion to the filmy sheer Organdies, and the patterns are bewildering in their variety and beauty. Then the Embroidered Swiss Muslins, the Lawns and DIMITIES, demand their share of attention — and deserve it.

Here are hints of some of the newest and most beautiful wash cottons that Europe and America have produced :—

French Printed Cottons

At 45c yd.—Printed Organdie Carreaux; handsome floral designs on white and colored, boldly corded plaid ground organdies.

At 40c yd.—Printed Organdie Raye; figures, floral designs and striped lace-like patterns on white and colored striped grounds.

At 35c and 40c yd.—Printed Mercerized Organdie Lisse, in floral designs and striped patterns on white and tinted grounds.

At 30c yd.—Printed Corded Organdie, handsome floral patterns on grounds of cluster-corded stripes.

At 37½c and 40c yd.—Printed Mercerized Pointelle; small rosebuds, lace-like figures, and floral scrolls on white and tinted sheer cotton grounds, woven with little raised pin-dots.

At 50c yd.—Printed Plumetis, delicate stripes, floral stripes, and floral clusters printed on white and colored grounds.

At 40c yd.—Printed Corded Batiste in attractive figured designs of colors on white.

At 37½c yd.—Printed Pique, colored dots, rings and figured stripes on white grounds.

At 45c yd.—Printed Cotton Nette, colored polka-dots on white.

Embroidered Swiss Muslins

At \$2 yd.—Elaborate floral striped designs and scroll figures.

At \$1.75 yd.—Attractive figures, and scroll designs formed by polka-dots.

At \$1.75 yd.—Cluster polka-dots forming designs on corded grounds.

At \$1.25 yd.—Small floral designs in attractive color combinations.

At \$1.25 yd.—Figures forming large polka-dots.

At \$1 yd.—Floral designs in great variety.

At 75c yd.—Leaf and polka-dot designs.

At \$1.50 yd.—Fancy Ribbon-drawn Striped Cotton Grenadine.

At 85c yd.—Embroidered Silk-and-Lace Grenadines with colored silk-embroidered dots.

At 65c yd.—Fancy Mercerized Broche Striped Grenadine.

At 50c yd.—Fancy Mercerized Striped Grenadine.

At 50c yd.—Printed Mercerized Striped Grenadine.

Printed Lawns and DIMITIES

At 22c and 25c yd.—Irish Printed DIMITIES in over two hundred designs; attractive figured stripes, floral designs, and handsome scroll figures, as well as the staple dots and stripes.

At 35c yd.—Printed Irish Linen Lawns; in dots, figures, figured stripes, and floral designs, mostly on white grounds.

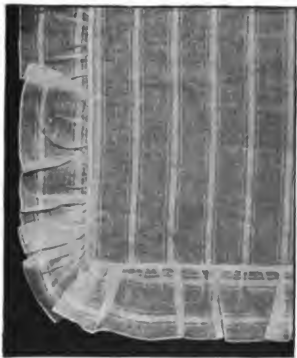
At 25c yd.—Printed Broche Striped Batiste, in a variety of dainty floral designs upon white grounds.

At 50c yd.—Printed Silk Figured Striped Mouseline, in a great variety of dainty Dresden floral patterns on white grounds.

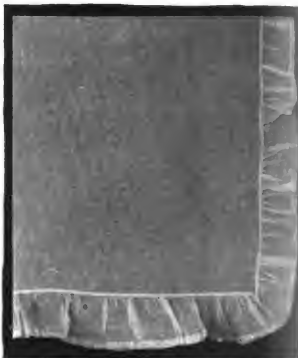
JOHN WANAMAKER

NEW YORK

A Page of Summer Curtains



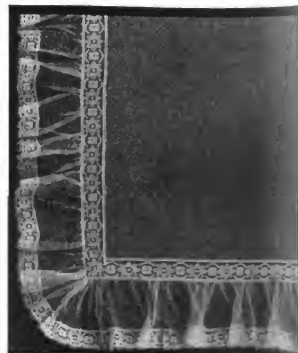
No. 1, 60c pair.—Ruffled muslin curtains, $3\frac{1}{2}$ yds. long, 40 in. wide.



No. 2, 90c pair.—Ruffled muslin curtains, 3 yds. long, 40 in. wide.



No. 3, 90c pair.—Ruffled muslin curtains; 3 yds. long, 40 in. wide; dots in all sizes.



No. 4, \$2 pair.—Ruffled net curtains; 3 yds. long, 40 in. wide.

JOHN WANAMAKER

NEW YORK

In writing to advertisers please mention THE WORLD'S WORK.

The Wanamaker Store

Bath=Robes for Men

The man who wants to lounge cosily for a while before turning in for the night, or to be suitably arranged for his morning pilgrimage to the tub, must have a bath-robe for his complete peace and comfort.



And he's much more comfortable in some bath-robcs than in others—depends on how they're made. You can't extract any joy from the sort that refuses to wrap itself around you when you want it to, or that hampers your freedom of motion because it's meanly proportioned.

We've based our bath-robcs on the point of view of comfort, combined with quality and good looks. Styles change—we keep abreast of them—lead them, for that matter; for we hunt all over Europe for new ideas, and have manufacturers execute them for us, or do so ourselves in our own factory.

As a result, we have more different kinds of bath-robcs, and more of each kind, and more kinds you won't find anywhere else, than any store we know.

For the Spring and Summer, we're especially strong on warm-weather bath-robcs—those made of imported Terry Toweling. They're soft, luxurious, absorbent, in all sorts of stylish patterns and colorings—and you may be sure of getting the best possible value at each price.

\$3 buys the cheapest, then they come at \$3.50, \$5, \$7.50, \$8, \$10, up to \$18.

JOHN WANAMAKER

NEW YORK

R & G Corsets

New Model 837



THE new model R & G Corset, Number 837, combines the good points of the straight-front, low-bust design, with sufficient length over the hip to conform with the present dress styles and yet remain easy and comfortable.

There are many variations in figures and R & G Corsets are made in many models to fit them. But there are more of the normal, average figure than of all the rest combined, and the beautiful, graceful lines of Model 837 are designed to fit this normal, or average figure.

Number 837 is a dollar and a half corset. Other numbers are from \$1 to \$10.

The costume shown herewith is fitted over Number 837.



NEW-SKIN

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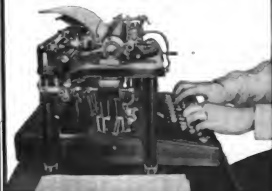
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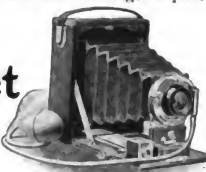
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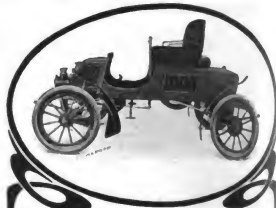
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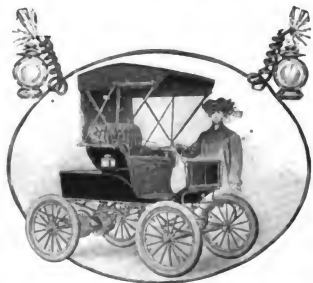
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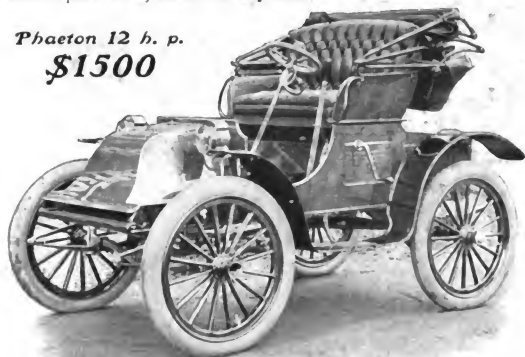
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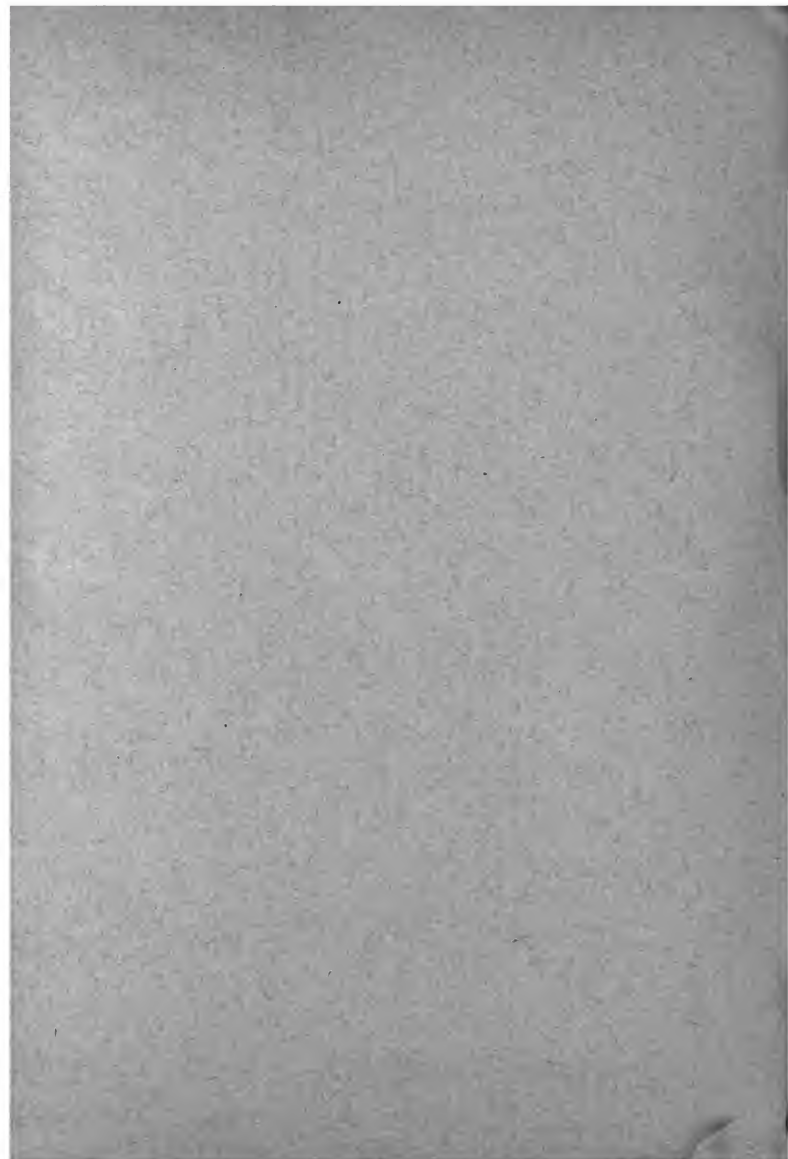
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